DEC 17 1913

Number 3
Volume XLVI

DECEMBER, 1913

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$3.00 with Directory

TEXTILE WORLD RECORD

LIBRARY OF CONGRESS
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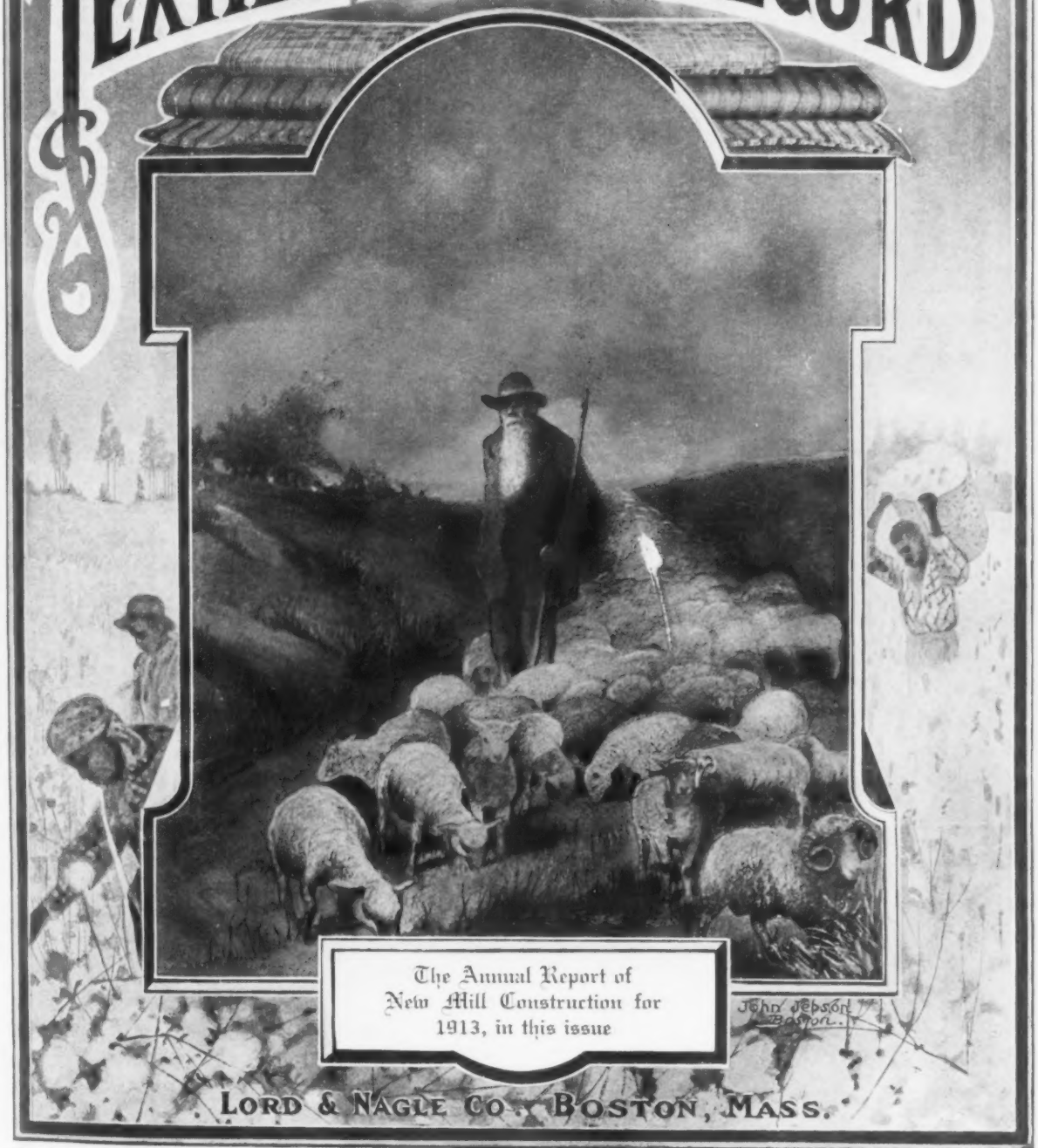


The Annual Report of
New Mill Construction for
1913, in this issue

LORD & NAGLE CO. - BOSTON, MASS.

Table of Contents Page 51 Buyers Index Page 147 Index to Advertisements Page 157

The TEXTILE-FINISHING MACHINERY CO.

Howard Building, Providence, R. I.

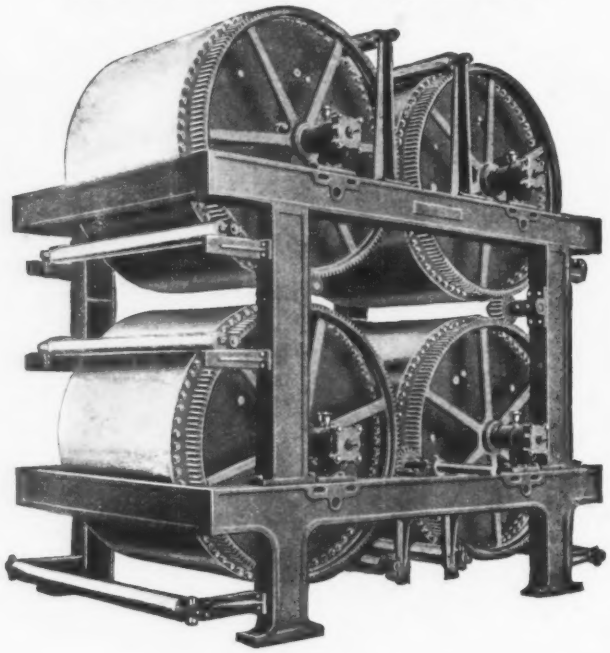
BUILDERS OF

Singeing, Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Machinery

FOR

TEXTILE FABRICS AND WARPS

Plans and Estimates for Complete Plants



Back Dryer

ALL KINDS OF

Horizontal and Upright Drawing Machines

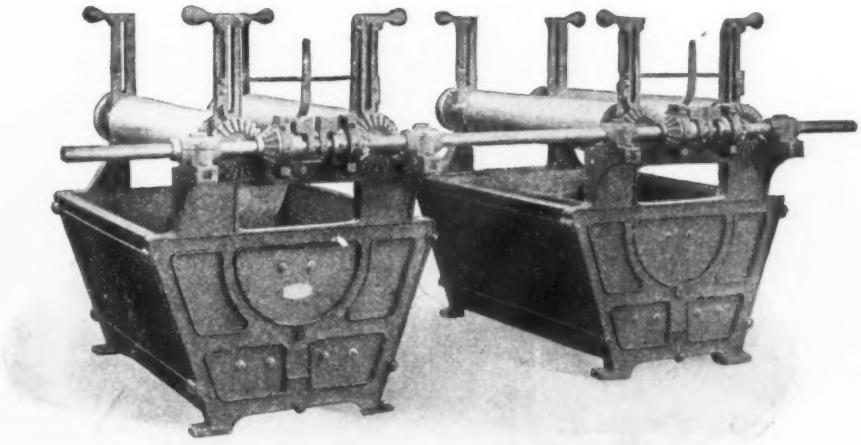
With cylinders made from either the best English tinned iron or best Lake Superior sheet copper, fitted wiih our

Patent Spiral Scoops

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

Providence Office, Room 417, Industrial Trust Building.



JIGGER

Bleaching, Drying, Dyeing and Finishing Machinery

for all textile fabrics.

The TEXTILE-FINISHING MACHINERY CO.

Howard Building, Providence, R. I.

BUILDERS OF

Singeing, Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Machinery

FOR

TEXTILE FABRICS AND WARPS

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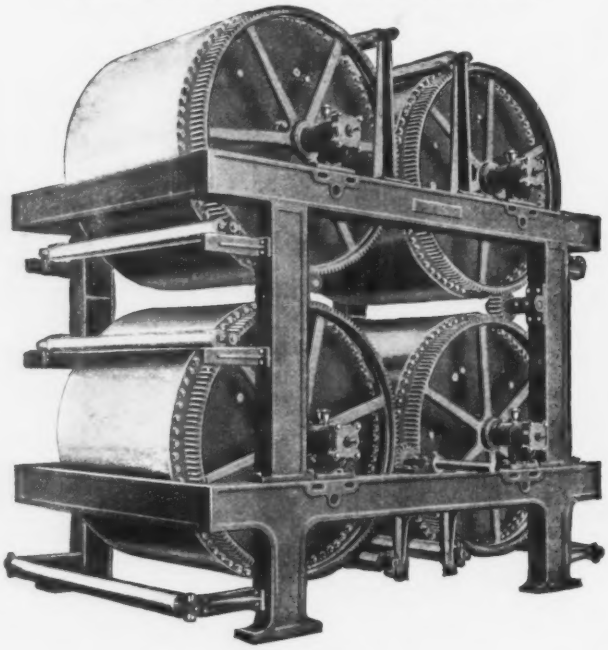

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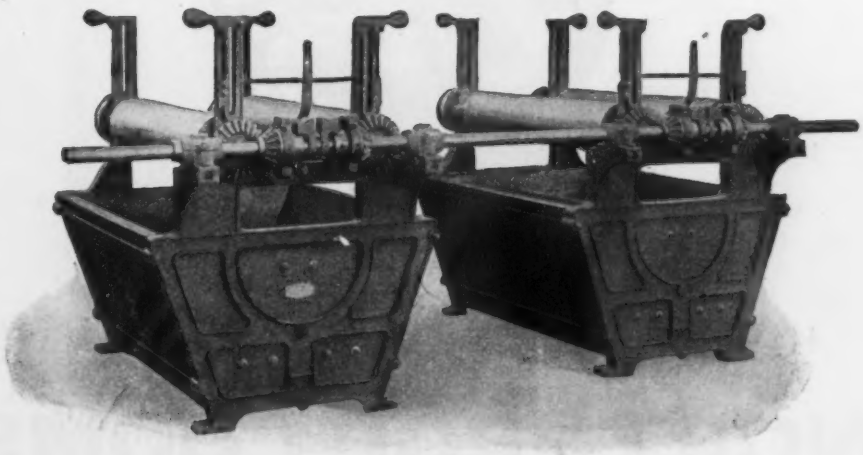


JIGGER

Bleaching, Drying, Dyeing and Finishing Machinery

for all textile fabrics.

NORTHROP LOOMS

TRADE MARK REGISTERED

EARN More Wages for the Weaver
Larger Dividends for the Mill

DRAPER COMPANY

HOPEDALE MASS.

The Rabbeth Centrifugal Clutch Spindle

Carries Bobbins at Uniform Level.

Produces more even twist.

Filling bobbins carry ten per cent. more yarn.

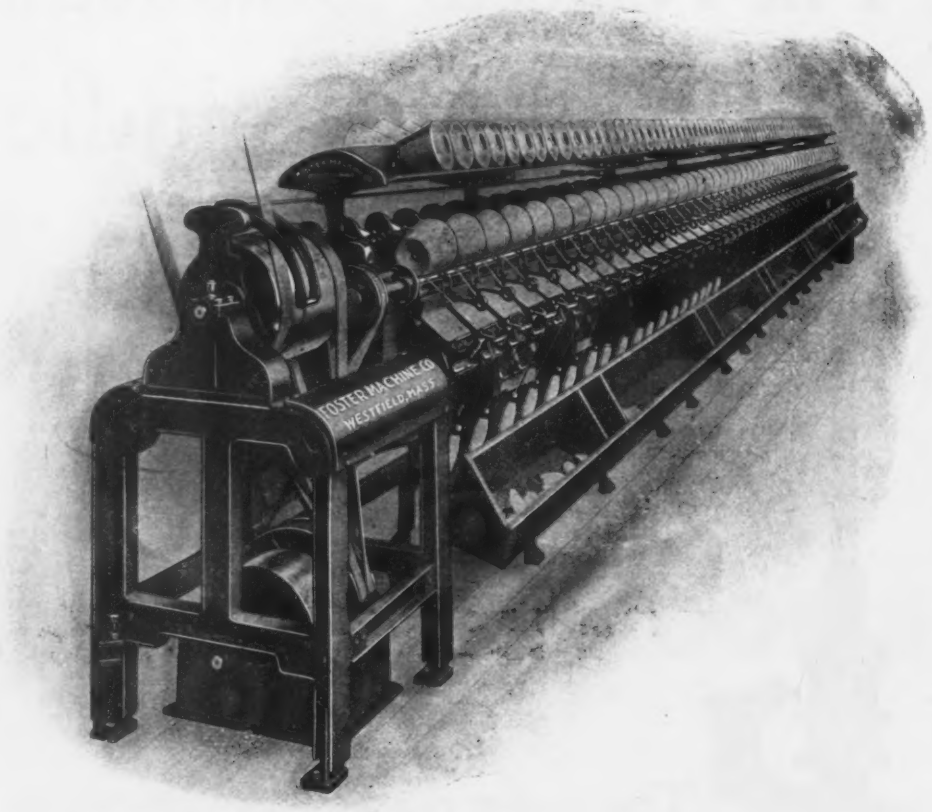
The only real improvement in spindles for years.

DRAPER COMPANY

HOPEDALE, MASS.

J. D. CLOUDMAN, Southern Agent, 40 So. Forsyth St., Atlanta, Ga.

The Foster Cone Winder



The cone package has attained its present favor through the extension of the use of the Foster Cone Winder.

Foster finishing has eliminated cobwebbed cones, ribbon wind chafing, loose ends and guide rubbed cones.

75 per cent of all the knitting yarns produced in the United States are wound on this machine.

Foster Machine Company

Westfield, Mass.

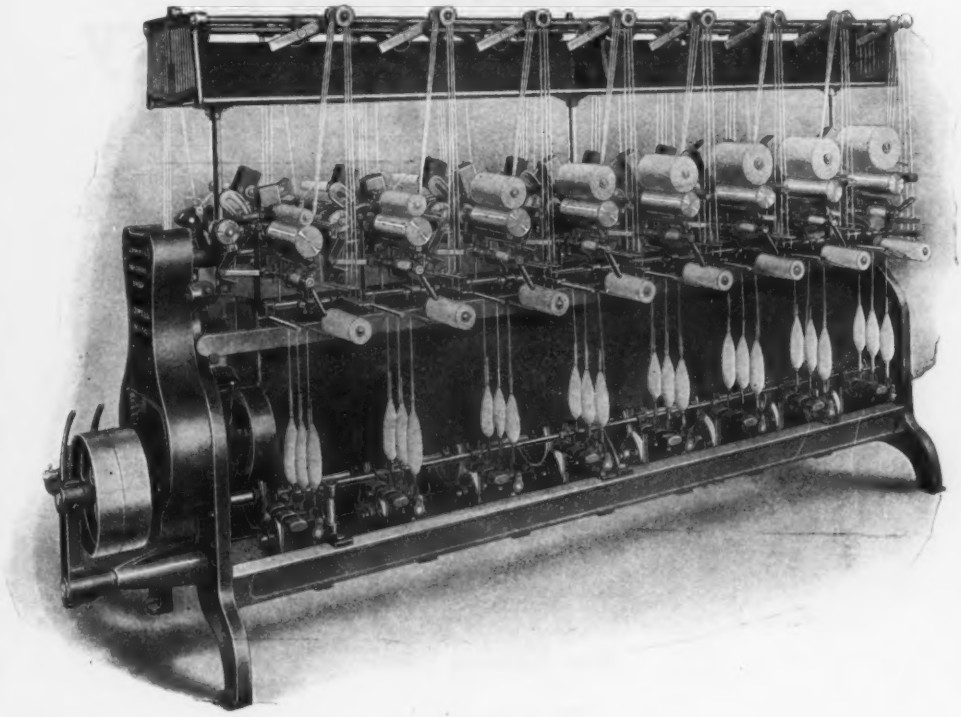
John Hill, *Southern Agent*, 3rd National Bank Building, Atlanta, Ga.

Saco-Lowell Shops

We manufacture

Cone and Tube Winders

For Cotton—Woolen—Worsted Yarns



We can reasonably claim—

High Spindle Efficiency
Low Labor Cost
Improved Mechanical Design

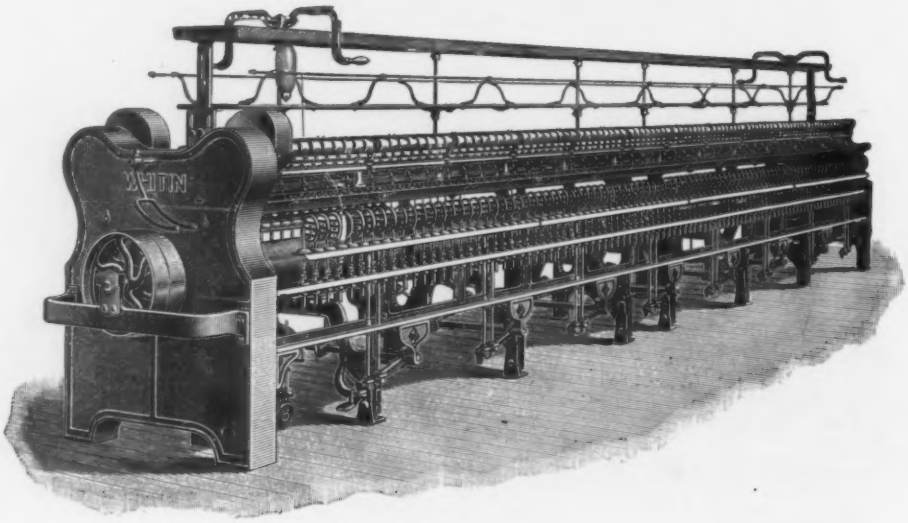
Shops: Biddeford, Me., Lowell, Mass., Newton Upper Falls, Mass.
Executive Offices: 77 Franklin Street, Boston, Mass.
Southern Agent: Rogers W. Davis, Charlotte, N. C.

The Whitin Machine Works

Whitinsville, Mass.

BUILDERS OF

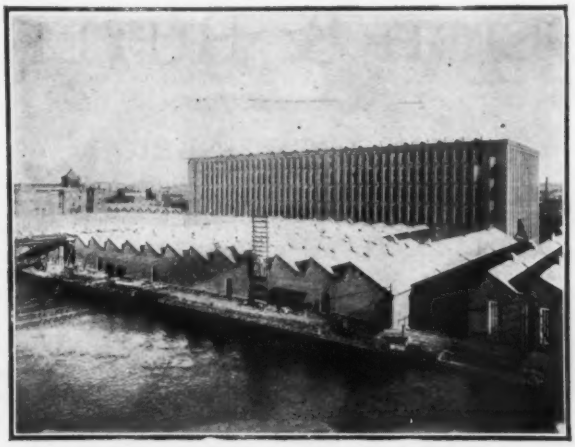
Cotton Mill Machinery



Ring Spinning Frame

CARDS
COMBERS
DRAWING FRAMES
ROVING FRAMES
SPINNING FRAMES
SPOOLERS
TWISTERS
REELS
LONG CHAIN QUILLERS
LOOMS AND DOBBIES

Southern Agent: STUART W. CRAMER, Charlotte, N. C.



A cold snap! That means trouble at the mill with fibers, yarns and machinery. Then consider that there are many mills running as smoothly as on a balmy spring day. They are the ***Carrier Equipped*** mills. Want your catalog now?

Carrier Air Conditioning Co.
Of America

No. 39 Cortlandt Street, New York City

NEW ENGLAND
E. T. Lyle, 1862 Beacon St.
Brookline, Mass.

CHICAGO
Ft. Dearborn Bldg.
Clark and Monroe Sts.

PHILADELPHIA
732 Real Estate Trust Bldg.

BUFFALO, 490 Broadway

LEIGH & BUTLER

SUCCESSORS TO

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

SOLE AGENTS

IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber — will comb from 7-8" stock to Sea Islands
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

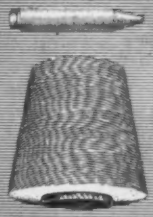
MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.

Archbutt-Deeley System for purifying and softening water.

JOSEPH SYKES BROS. Card Clothing for Cotton.
JAMES CRITCHLEY & SONS. Card Clothing for Woolen and Worsted.
WILSON BROS. BOBBIN CO. Bobbins, Shuttles, Etc.
THOMAS B. HAIGH. Double Loop Bands, Spinning Tape, Etc.
DRONSFIELD BROTHERS. Grinding Machinery and Emery Filleting.
HARDING'S Fallers, Pins and Circles.
The Best French and English Combing and Rubbing Aprons.
Card Flats reclothed and Lickers-in rewound.

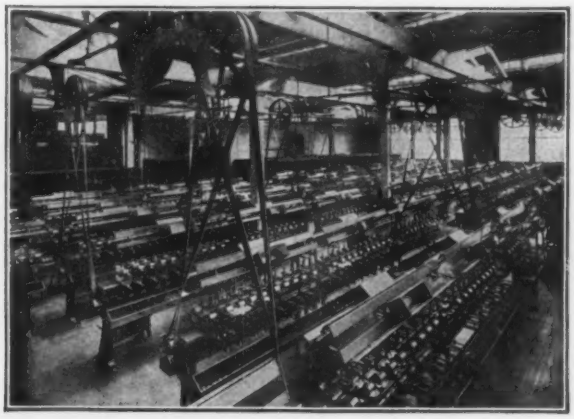
UNIVERSAL WINDING MACHINES



PARTS ALL INTERCHANGEABLE

Leesona

TRADE MARK REG. U.S. PAT. OFF.



RECENT INSTALLATION OF "UNIVERSAL" FILLING WINDERS

UNIVERSAL WINDING COMPANY

PATENTEES AND SOLE MANUFACTURERS

BOSTON

The History of a Factory Ceiling

(From actual photographs)

Painted with a cold-water paint
Flaked off until it looked like A.
Scraped and painted with Rice's Mill White.

The durable, lasting qualities of Rice's Mill White are shown by the following extract from a letter of the General Fire Extinguisher Co.

"We are *still pleased* with the finish of Rice's Gloss Mill White, which was applied on the ceilings and walls of our Auburn Plant *three years ago.*"

RICE'S MILL WHITE

is an **oil** paint, containing no varnish, giving **a glossy,** tile-like finish. It will not craze, crack or scale under the jar of machinery. It stays white longer than any other gloss paint.

We were the originators of "Mill White" Paint. None of its imitations have the elastic, durable qualities which made the reputation of "Mill White" Paint.

Rice's Mill White Paint is sold direct, in barrels containing sufficient paint to cover 20,000 square feet, one coat. If you have that area of ceiling and wall space to cover,

Write for Booklet and Sample Board

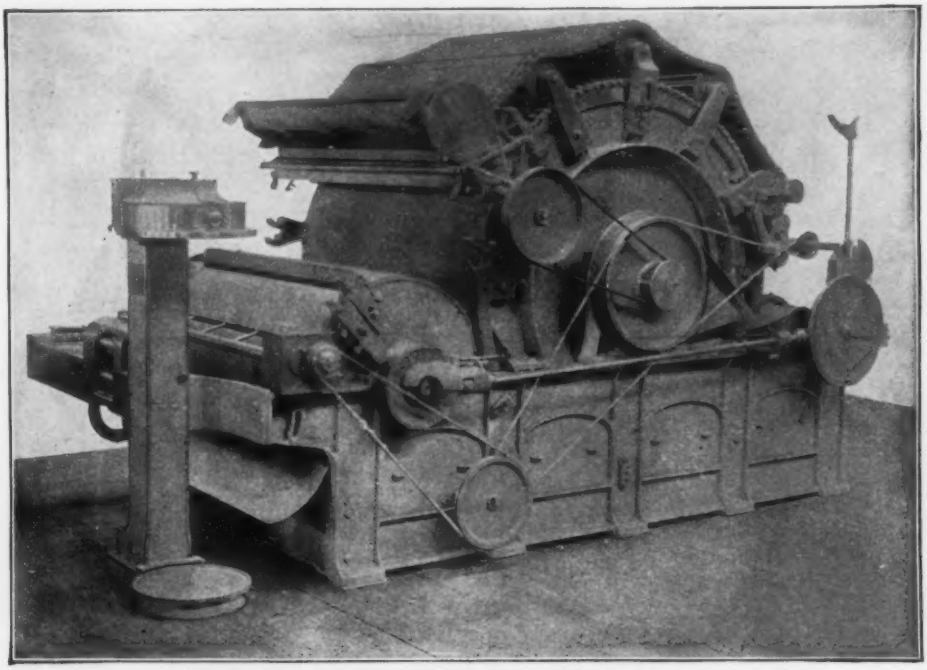
Ask for a copy of our booklet, "More Light." *Write today.*

U. S. GUTTA PERCHA PAINT CO., 20 Dudley St., Providence, R. I.

MASON MACHINE WORKS

Taunton, Mass. **Greenville, S. C.**

Builders of
Revolving Flat Cards, Drawing Frames,
Spinning Frames, Looms, Dobbies, Etc.



Superior Loom Cranks for Repairs

Another recent installation

400 "Ideal" Automatic Looms

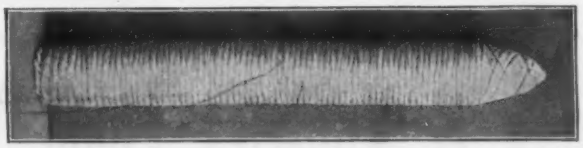
on 5 harness sateens

These looms were installed as the result of a test during which the superiority of Stafford Looms over all competitors was clearly demonstrated

THE STAFFORD COMPANY

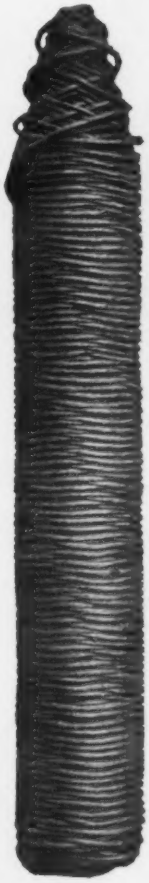
READVILLE, MASS.

FRED H. WHITE, Southern Agent - - Charlotte, N. C.

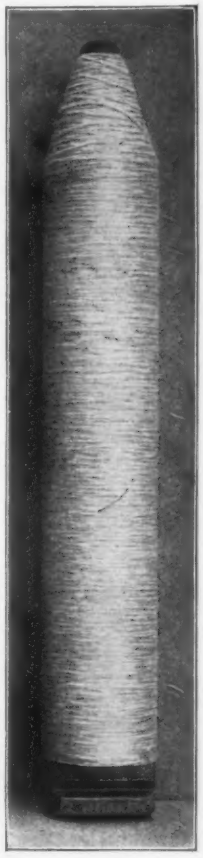


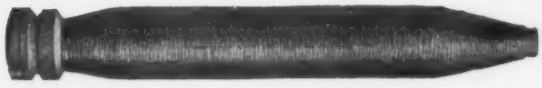
No. 2

No. 1 and No. 2—Cops to weave from inside seven-eighths to three inches diameter and up to seventeen inches long. Suitable for various kinds of coarse goods such as grass matting, cotton bagging, cocoa matting, all kinds of carpets, felts, chinchilla, linen, jute, flax, asbestos, hose and narrow fabrics such as wicks, belting, webbing, surcingles, halters, etc.



No. 3 and No. 4 Shuttle Bobbins from seven-eighths to two inches in diameter and any length up to twelve inches. Suitable for all kinds of duck, upholsteries, tapestries, asbestos, ratana or any kind of fancy yarns for automatic or other looms.





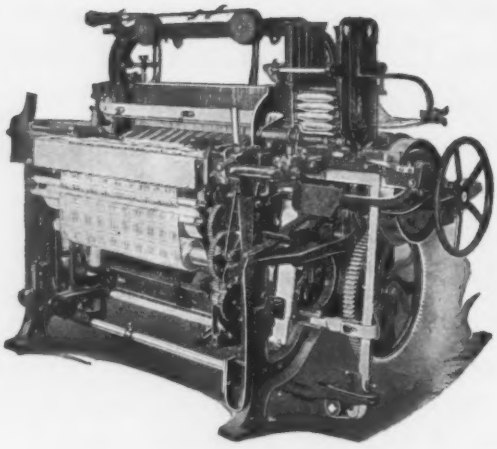
No. 1 No. 4 No. 3

OSWALD LEVER CO., Inc.

Lehigh Avenue and Front Street, Philadelphia, Pa.

Builders of Textile Machinery WINDERS ESPECIALLY

Crompton & Knowles Loom Works



Automatic Gingham Looms

One of our latest productions for weaving goods of two or more colors in the filling. Like every loom we build, it has the advantage of a successful mill test.

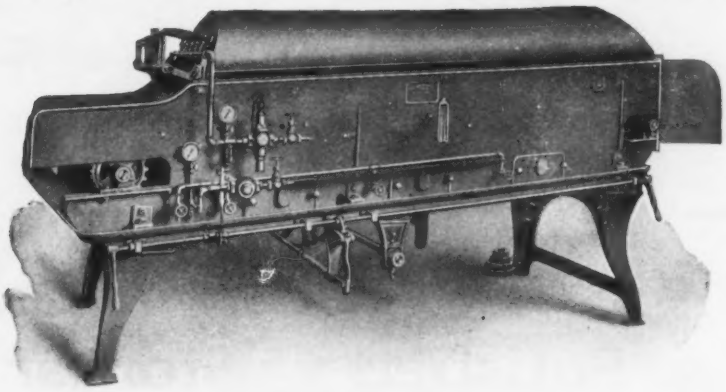
WORCESTER, MASS.

Providence, R. I. **Philadelphia, Pa.**

Southern representative, ALEXANDER & GARSED, Charlotte, N. C.

The Yarn Conditioning Machine

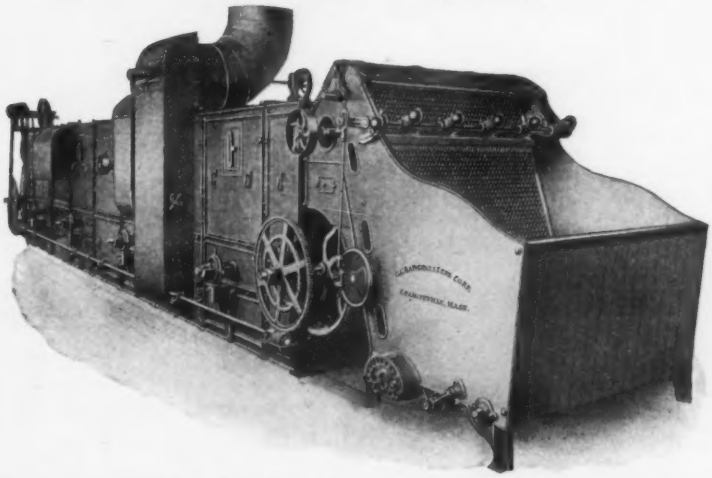
Sets the twist in your filling and overcomes kinky filling difficulties. It conditions without injuring the bobbins



The Sargent Drying Machines

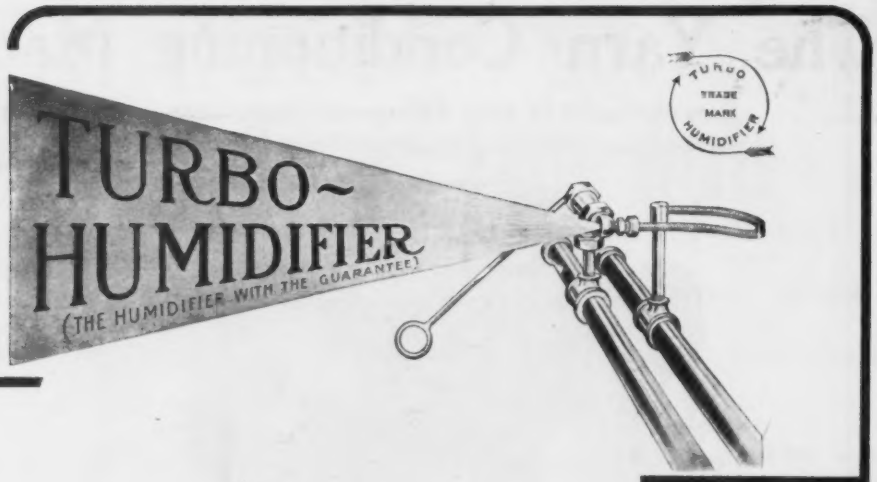
Metal Construction
Asbestos Insulation

Scientifically designed for greatest economy in drying Cotton, Wool, Hair.



Wool Washers, Wool Dusters and Openers, Burr Pickers
Complete Carbonizing Plants
Automatic Feeds for Cotton and Wool

C. G. Sargent's Sons Corp., Graniteville, Mass.



A Satisfied Customer

Is — And Writes — A Good Advertisement

A Turbo user wrote "the body" for this ad. He didn't intend it as an advertisement. But it is, in itself, good evidence of the Turbo's efficiency in service and low cost of upkeep.

And that's why we think it a good advertisement. Do you agree with us?

Upkeep Cost 37c. for 365 Days

"We have just laid out a routine for the care of the Humidifiers and have put a section of the work through and obtained our costs from this as follows:

Our Compressor Cylinder opened every three months and cleaned	$2.13
General cleaning of all heads in system every six months	8.00
Special attention	12.00
Cleaning water filters on tanks and water jacket of Compressor	$7.20
Total cost of labor for year (79 heads)	29.33

"We find that this system keeps the heads all in A1 condition all of the time and while we have just instituted the work, we may find that later we can cut these figures."

A MASSACHUSETTS MILL.

You see the letter is full of "reason-why" argument in favor of the Turbo—and we have a bunch of others just as eloquent.

Ask for a Turbo Catalog, or a Turbo Engineer—you may send for either or both without obligation.

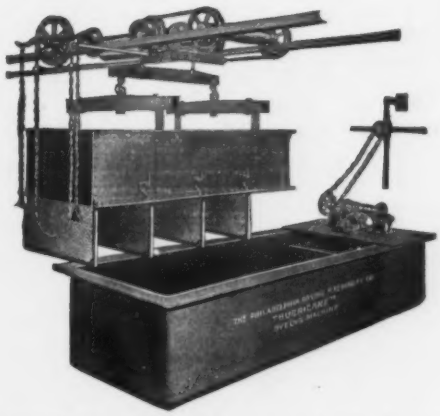
The G. M. Parks Company

Fitchburg, Mass.

Southern Office, 32 West Trade St., Charlotte, N. C. B. S. Cottrell, Mgr.

Dyeing Machinery

For
Hosiery,
Skein Yarn,
Slubbing, etc.

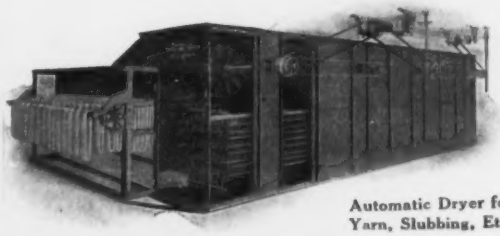


BETTER
Dyeing
AT
Less Expense

The **BEST** and
Most Economical
Dyeing Machine

Give us an
Opportunity to
Prove our claims

"Hurricane" Circulating Dyeing Machines are built in various sizes and types

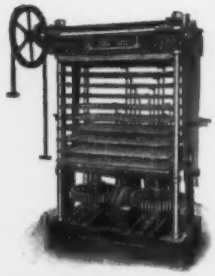


Automatic Dryer for
Yarn, Slubbing, Etc.

COMPLETE EQUIPMENTS FOR
DYEING
SCOURING
BLEACHING
CARBONIZING

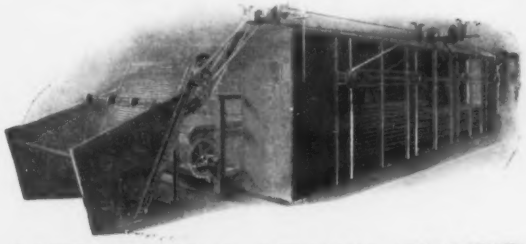
FIRE-PROOF DRYERS

Steel Construction,—Insulated with Asbestos



Power Screw / and Hydraulic \ **PRESSES**

FANS
MOTOR
AND
BELT-DRIVEN

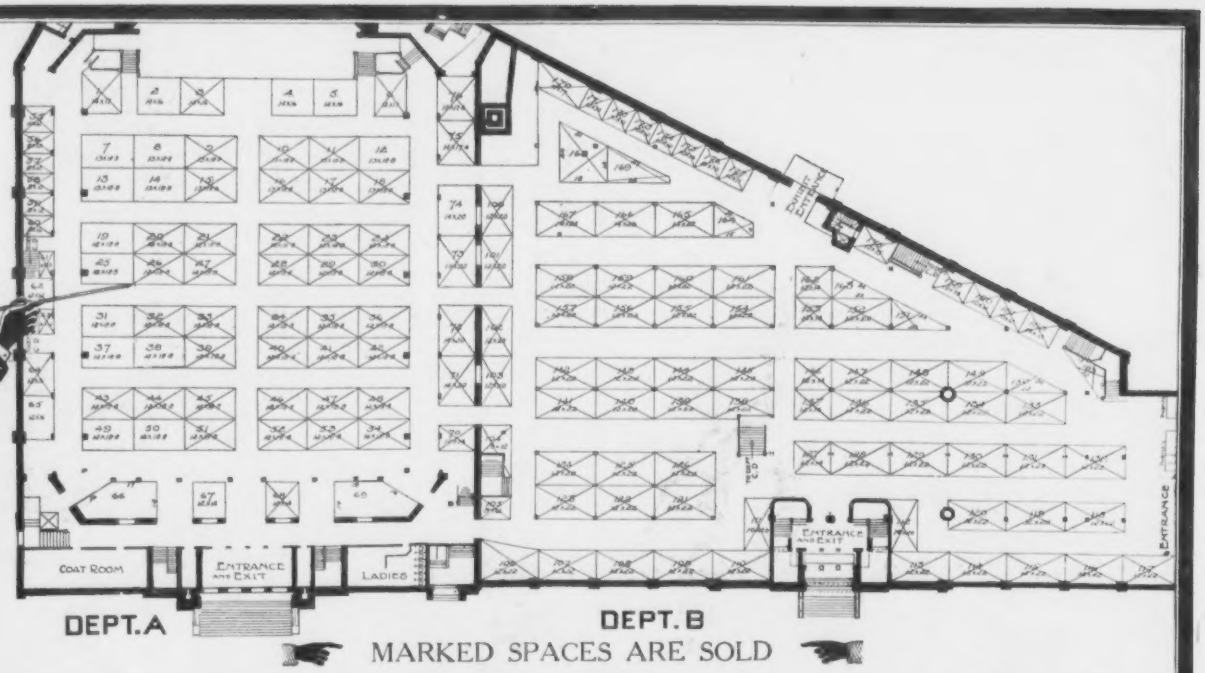


AUTOMATIC STOCK DRYER
(With Sectional-Continuous Conveyor)
For Cotton, Wool, Hair, Rags, Etc.

THE PHILADELPHIA DRYING MACHINERY CO.

Main Office and Works:
6721 Germantown Ave., Philadelphia, Pa.

Boston Office:
53 State Street



MARKED SPACES ARE SOLD

WHAT SPACE SHALL WE MARK FOR YOU?

Fourth National Textile Exhibition

Cotton, Woolen, and Knitting Machinery, Power and Mill Construction Departments.

MECHANIC'S BUILDING, BOSTON. APRIL 27 to MAY 2, 1914

Send for list of those who have already engaged space.

CHESTER I. CAMPBELL, Sec'y and General Manager. 5 PARK SQUARE, BOSTON.

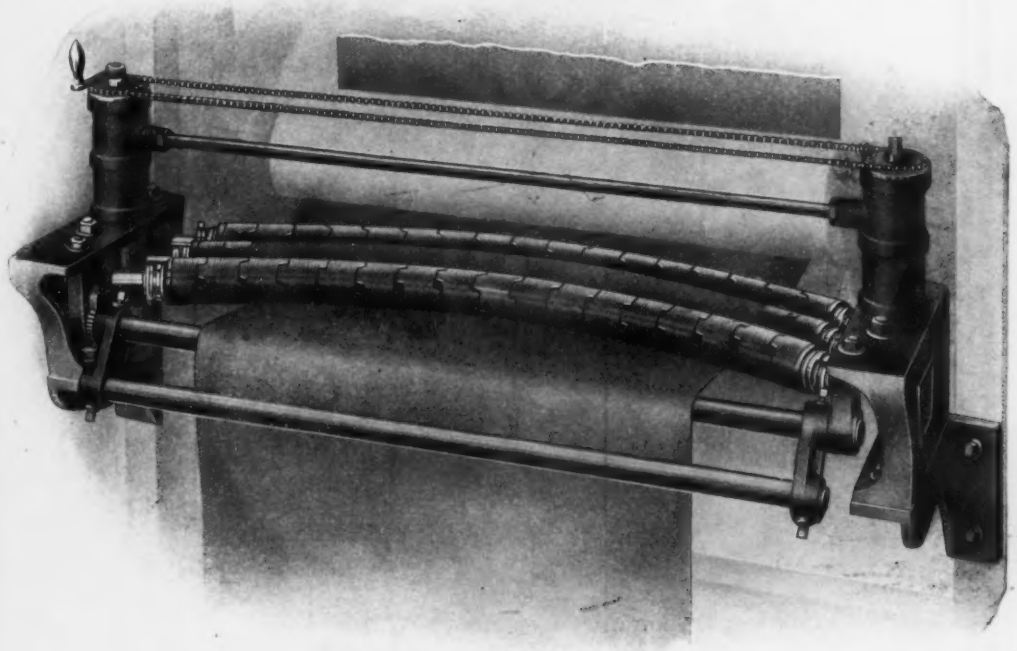
THOMAS LEYLAND & COMPANY

F. T. Walsh, Manager

60 India Street, Boston, Mass. WORKS AT READVILLE, MASS.

Sole Manufacturers of THE WILLIAM MYCOCK

Improved Regulating Cloth Expander

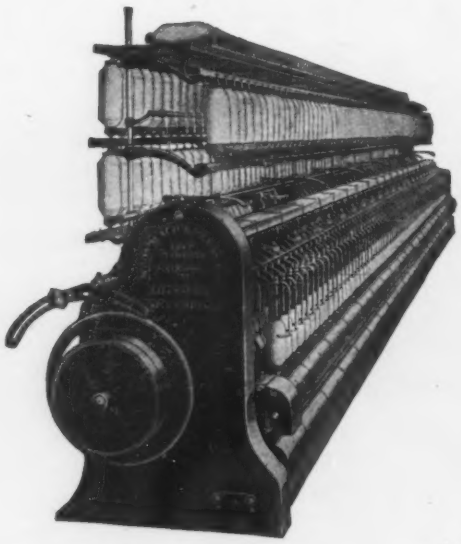


Expander attached to Calendar showing Regulating Motion and Adjustable Tension Bars

This Expander and its improved features are fully protected by basic United States patents, under which the builders will maintain their patent rights against any who may violate such rights by building, selling or using machines of this character.

Scutchers, Sewing Machines, Open Bleaching Machines, Blanket Washers for Calico Printers, Guides, Etc.

Cotton Machinery by Specialists



With Latest Improvements

Maximum of Efficiency Minimum of Repairs

Woonsocket Machine & Press Company

Southern Representative:
J. H. MAYES, Independence Bldg.
Charlotte, N. C.

Northern Representative:
WM. V. THRELFALL, Marshall Bldg.
Boston, Mass.

Cotton Machinery by Specialists

Pickers and Revolving Flat Cards

POTTER & JOHNSTON MACHINE CO.

Pawtucket, R. I.

Drawing and Roving Machinery

WOONSOCKET MACHINE & PRESS CO.

Woonsocket, R. I.

Ring Spinning and Twisting Frames

FALES & JENKS MACHINE CO.

Pawtucket, R. I.

Spoolers, Winders and Reels

EASTON & BURNHAM MACHINE CO.

Pawtucket, R. I.

Warpers and Beamers

T. C. ENTWISTLE CO.

Lowell, Mass.

Southern Representative:
J. H. MAYES, Independence Bldg.
Charlotte, N. C.

Northern Representative:
WM. V. THRELFALL, Marshall Bldg.
Boston, Mass.

Lane Canvas Mill Baskets Boxes or Trucks

Found in the Largest and Most Modern Mills

BECAUSE

FIG. 27

Lane Canvas Truck.
Made as shown, or with canvas partition. Mounted on improved **Thread Guard** Wheels, as above, or on swivel casters. Leather bound rim. Heavy duck.

Durability
Smoothness
Lightness
Economy

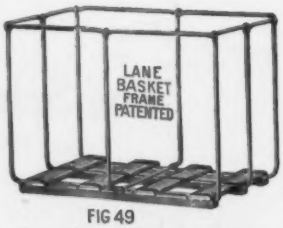


FIG 49

Lane Basket Frame of Tough Spring Steel.
Renewable Hard Maple Shoes.
Also furnished with steel shoes, where dragging is not severe.
Number and diameter of frames varies with size of baskets.

COUNT

A Style for Every Use

W. T. Lane & Brother

Manufacturers

Poughkeepsie **New York**

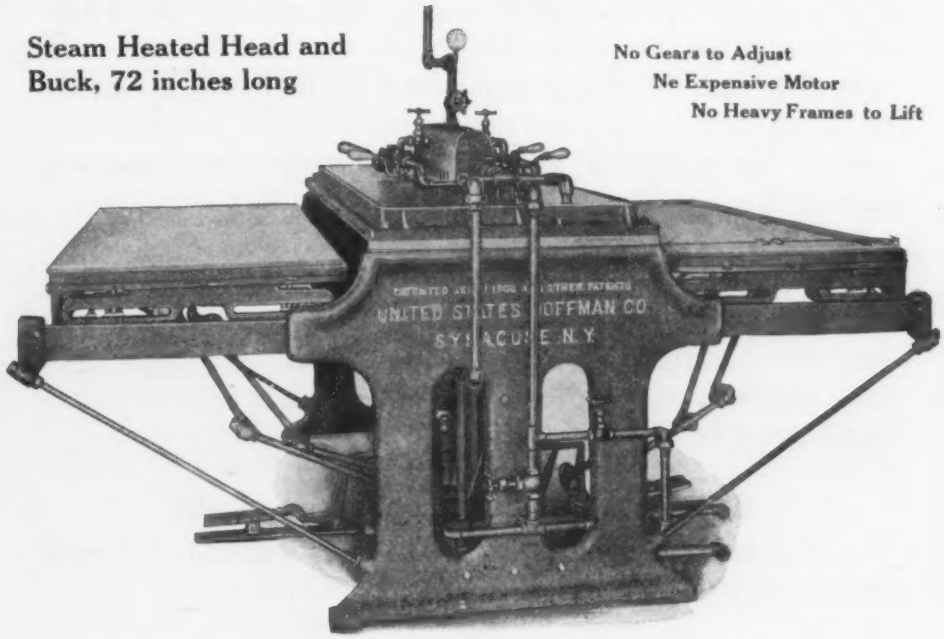
The "HOFFMAN" "FFF" Underwear Press

Can be adjusted to the requirements of the Press room—so as to give the desired finish to any class or style of underwear.

This adjustment is regulated by a very simple movement of the wrist.

Steam Heated Head and Buck, 72 inches long

No Gears to Adjust
No Expensive Motor
No Heavy Frames to Lift



"HOFFMAN" "FFF" Underwear Press

The principle of the "HOFF-MAN" is the application of LIVE DRY Steam to the garment FROM ABOVE while under pressure—giving it a very superior finish.

United States Hoffman Co.

SYRACUSE, N. Y.

Write for information

SPECIAL MILL SUPPLIES
THAT HELP INCREASE PRODUCTION

New Hand Threading Shuttle

This new patented shuttle is the simplest, most effective, and quickly threaded shuttle made. It can be operated with the finest silk or the coarsest filling—will not unthread—it is arranged so that lint may be easily removed, and so that felt can be inserted for tension purposes. It complies with the Massachusetts sanitary shuttle law.

Never-Slip Cop Spindles and Tubes

We can guarantee that with this combination you can run your looms faster and with longer cops than with any other spindles or tubes. With this arrangement there is no waste of filling.

Paper Cop Tubes, Cones and Shells

We make a complete line of these, all of the very finest quality—samples sent free on request.

Shuttles and Shuttle Irons

MADE FOR ALL TEXTILE PURPOSES

When in need of any of these products, all of which are fully patented and protected, give us a trial order—we can guarantee you complete satisfaction.

American Textile Specialty Machinery Co.

670 Eddy Street, - Providence, R. I.

Also 13th St. and Boulevard, Long Island City

The Most Useful Power for the Least Money---From Any Source

Comparing the mechanical lineshaft drive from engine with the G–E individual motor drive, brings out general truths applicable to every industry. Every man wanting more power, or desiring to pay less for power, should read these comprehensive facts:

More power can be generated from a given amount of coal, over extended periods with less maintenance, by using a Curtis Steam Turbine than with any other power equipment You get maintained efficiency without constant valve grinding and repairs due to many moving parts.

More useful power can be generated from a given amount of water, oil, sun or wind power where the power is to be conveyed any considerable distance, by G–E generators than with any other equipment.

More power can be obtained at the place where it is to be used with electric transmission, if the distance is consderable than with any other form of power transmission. This is due to the high efficiency and long life of G–E generators coupled with the elimination of power losses in transmission due to steam condensation, lineshaft friction and belt slippag

It will be profitable for you to consult us. The assistance of any part of our organization in solving your power problems is extended to your local power company, or our nearest motor agency.

General Electric Company

Largest Electrical Manufacturer in the World

General Office: Schenectady, N. Y.

Address Nearest Office

Atlanta, Ga.
Baltimore, Md.
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Chattanooga, Tenn.
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New York, N. Y.
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Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio.
Washington, D. C.
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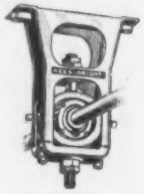
For Texas, Oklohoma and Arizona business refer to Southwest General Electric Co., (formerly Hobson Electric Co.)—Dallas, El Paso, Houston and Oklahoma City.
For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont. 4378

PLANT No.1. BERLIN, GERMANY.

BALL ~ BEARINGS

HB DWF



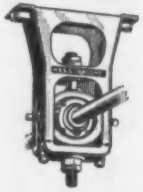
The Hess-Bright Manufacturing Company

Pioneers in the introduction of Annular Ball Bearings

Most extensive resources and plants in existence devoted exclusively to ball bearing manufacture

Main Offices and Plant No. 2 on line of Penna. R. R. to New York

No. 27 E. Erie Ave., Philadelphia, Pa.



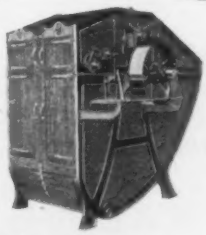
A Line in Your Plant is a Convincing Argument

PHILADELPHIA	NEW YORK	CHICAGO
666 North Broad Street	1974 Broadway	1800 Michigan Avenue

HESS BRIGHT HB

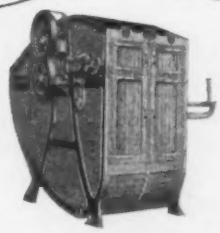
PLANT No.2. PHILADELPHIA, PENNA.

HESS BRIGHT HB



The Hunter

NO. 10
FULLING
MILL



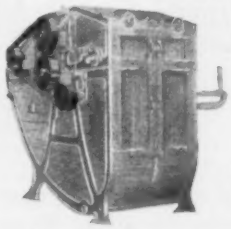
DRIVING SIDE

GEAR DRIVE

CLOTH WASHERS

PEICE DYE
KETTLES

SOAPING
MACHINES



BELT DRIVE

ROPE DRIVE

JAMES HUNTER MACHINE CO.

NORTH ADAMS, MASS., U. S. A.

Starch

THE particular case of your own mill needs careful study to determine what starch is best suited to *your* SIZING and FINISHING problems.

We have reduced the manufacture of starches for textile work to a science by years of factory investigation and laboratory research. We are ready to take up the special case of your mill and point out to you what starches are most adaptable and reliable for your purposes.

Six years of careful investigation of conditions in the cotton mills of the country has taught us the needs of the trade.

Six years' research in the best equipped Starch Laboratory in America has put us in touch with starch chemistry.

Six years of manufacturing, with cotton mill problems in mind, has produced our special Brands of Textile Starches.

We want to send our special starch expert to your mill. We want him to go into the matter of sizing with your boss of slashing—check up your sizing processes—find out whether you are now using the starches that will insure you the most efficient and economical results.

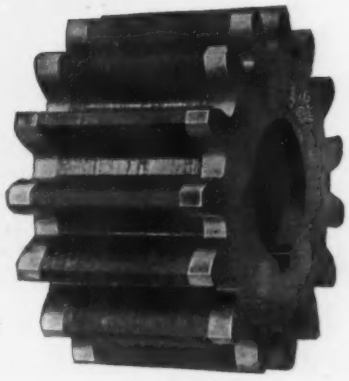
This special starch expert service is absolutely free—send us a sample of the starches you are using. We will give you an exact analysis of them and send our practical man to study your needs. Write a letter now to our Mill Starch Department.

Corn Products Refining Company
NEW YORK

Starch

NEEDLESS GEAR NOISES CONDEMNED BY A PROMINENT ENGLISH EDITOR

One after another, editors the world over, are condemning gear noises. Surely the subject is worth every factory owner's attention. Here is what Engineering Review of London has has just said editorially:



"Being absorbed in the development itself, the engineer does not worry about what he regards as an inevitable sequel. It is not until he is forced by public outcry or by actions for nuisance that he takes real trouble to reduce noise and vibration. But it may be worth his while to consider that a great deal of the public opposition to the extended application of mechanical inventions is inspired by the dislike of noise. If railways, tramways and motor vehicles were silent, they would not be the object of so much antagonism. A great deal has already been done to secure quieter running on rails and on roads, but the fact remains that traffic is still too noisy. It may also be asserted that hosts of industrial processes are too noisy. Only the most superficial attention is given to the damping of noise and vibration. Little or no consideration is given to the fact that both noise and vibration are indications of wasted energy, besides being aggravating causes of wear and tear. It is impossible, of course, to eliminate noise from the rapid movement of machinery, but it is a long way from such an admission to the deduction that it is not worth while troubling to keep it at a minimum. We believe that a good case could be made out of the systematic minimising of noise and vibration, on the score of increasing the health and efficiency of employees, and also on that of economising power and lengthening the life of machinery."

Under NO conditions are noisy metal-to-metal gear drives desirable.

Among the quiet metal-to-rawhide drives, twenty years of tests have proven New Process Noiseless Pinions are the most durable; also the most suitable for heavy duty.

A trial would soon demonstrate dollars and cents benefit to the factory owner as well as comfort to the operatives.

Our plant is the world's largest devoted exclusively to gear making, and if your high speed transmissions can be quieted, we certainly can help you.

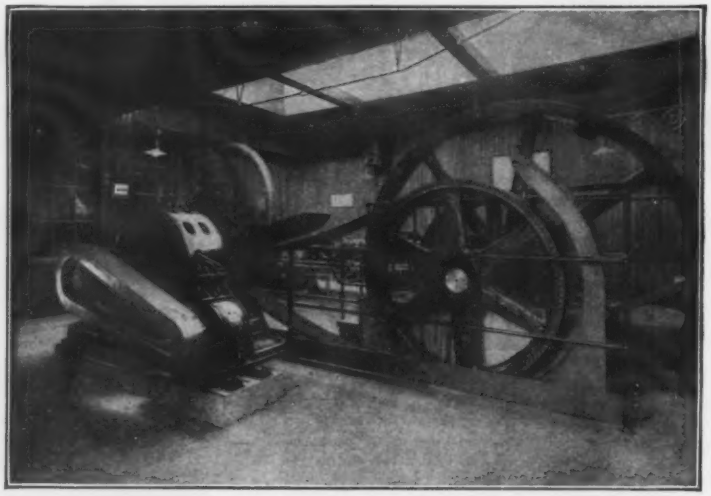
Ask for book "Noiseless Gear Driving"

NEW PROCESS IS TO ALL OTHER RAWHIDE AS STEEL IS TO IRON

N.P.R.H. NEW PROCESS GEAR CORPORATION N.P.R.H.

SYRACUSE, N.Y.

Canadian Agents: Robert Gardner & Son, Ltd., Montreal



We have in the past months shown you a few of the

SPECIAL APPLICATIONS OF MORSE FLEXIBLE GEARING IN TEXTILE MILL SERVICE

Such as Spinning Frame Drives and Line Shaft Drives

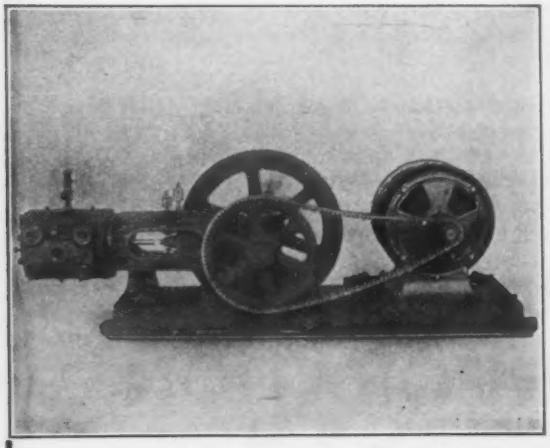
BUT DO NOT

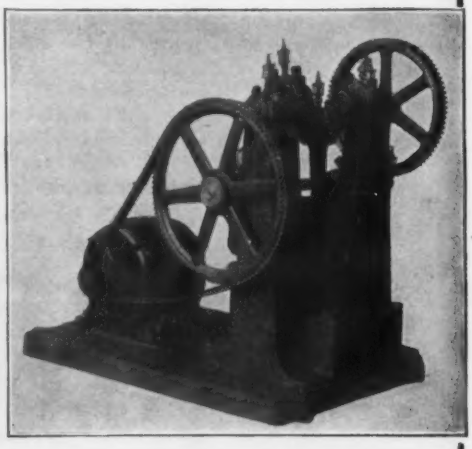
lose sight of the fact that the range of application of this form of power transmission is practically **unlimited.** In many cases **Morse Chains** will give **Better Service** than any other form of drive for running **Pumps, Compressors, Electric Generators, Exciters, Fans, Etc.**

We now have in successful operation drives transmitting an aggregate of over 500,000 H. P. Individual drives running from 1 H. P. to 2000 H. P. each.

Let us figure on some of your power transmission problems.

Our Bulletin No. 9B is particularly interesting.





MORSE CHAIN CO., Ithaca, N. Y.

N. E. BRANCH, 141 MILK STREET, BOSTON

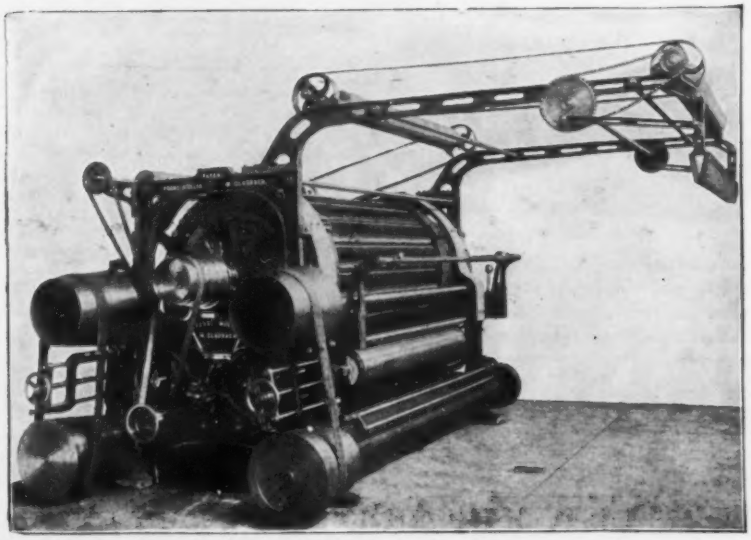
A. W. BUHLMANN

Textile-Engineer

200 Fifth Avenue - New York

Representative in the United States and Canada
for

FRANZ MUELLER, Maschinenfabrik, M. Gladbach



The Mueller 36 Roller Universal Napping Machine

¶ The Supremacy of the Mueller Napper is acknowledged all over the world.

¶ For years this machine has been used by the leading firms of the trade in preference to any other napper.

¶ No other machine can surpass it in point of construction, workmanship and economical upkeep. None can equal it in quality and quantity of production.

¶ It is the Napper you will eventually buy.

G 1854 K

Educational Talks on Leather Belting.

Progress Made in the Manufacture of Leather Belting

In the construction of leather belts in the early days of the industry, the whole hide was cut into strips which were riveted together, so that the one grade of belting produced was made from leather that varied in quality, thickness and weight. This belting for several years answered all purposes for which belting was used.

The development of modern efficient machinery necessitated the manufacture of higher grade belting to meet the increasingly severe requirements.

Careful study in workshop, testing room, and laboratory has resulted in the selection of hides, and the adaptation of processes and materials to produce several brands, or weights of high quality belting each peculiarly suited to certain conditions of service.

The rigid maintenance of this exact standard of quality, weight and thickness for each brand, in contrast to the old fashioned methods mentioned above, is of vital importance as it assures under similar conditions uniform service from any given brand of belting.

The improvement in leather for belting would have availed little had we not at the same time perfected a cement for joining laps, the use of which has superceded the old style weak riveted joint, and proven in actual service the strongest and most efficient method of constructing belts.

To determine the most efficient and economical quality, weight and thickness of leather belting for any particular drive it is essential to know :—

First :—Whether for a horizontal or vertical drive.
Second :—Open drive, drive with idler, or quarter turn drive.
Third :—Diameter of pulleys.
Fourth :—Revolutions per minute of driving pulley.
Fifth :—Horse power to be transmitted.

Oak Tanned Leather Belting, as it has been developed, is recognized as the best belting for ordinary conditions. For certain unusual and exacting demands, however, we make a belt—our SPARTAN BRAND—using specially tanned leather and special cement—a belt remarkable for its pliability and consequently increased pulley-grip, great tensile strength and resistance to steam, water, oil, heat and chemical fumes.

A comparison of the crude leather belting of early days with our remarkably efficient modern product will prove that our industry is well abreast of the day in mechanical progress.

Subject for next month: "Proper Selection of Belts"

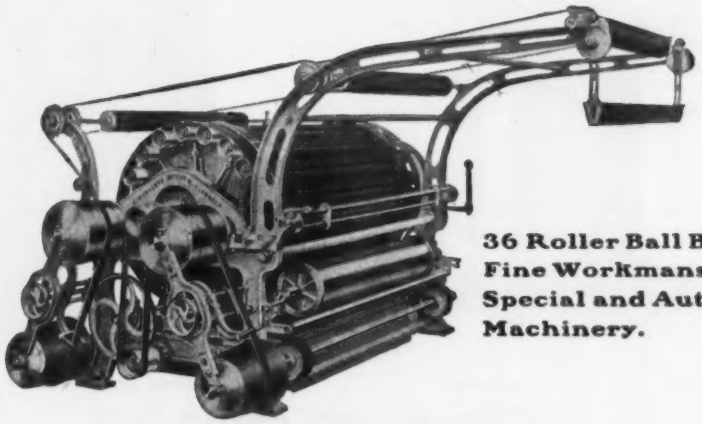
The Graton & Knight Mfg. Co.

Oak Leather Tanners and Belt Makers
WORCESTER, MASS., U. S. A.

"Consult our Engineering Department in connection with your Transmission Problems."

MONFORTS

Largest Napper Builder in the World



36 Roller Ball Bearing Fine Workmanship by Special and Automatic Machinery.

TRY THE NEW TARIFF

ON OUR

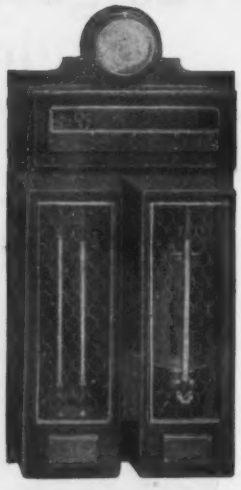
Rotary Presses, Paul Klug Dry and Wet Decating, Fulling Machines, Tentering and Drying Machines with Automatic Electric Feeder, Cross Spool and Beam Dyeing. The new process Niederlahnstein Automatic Hank Mercerizing, Card and Napper Clothing, etc.

L. H. A. Schwartz & Co.

40 Central Street **Boston, Mass.**

Cramer System
of
Air Conditioning

Cramer "High Duty" Air Conditioner



Cramer Automatic Regulator

FACTS

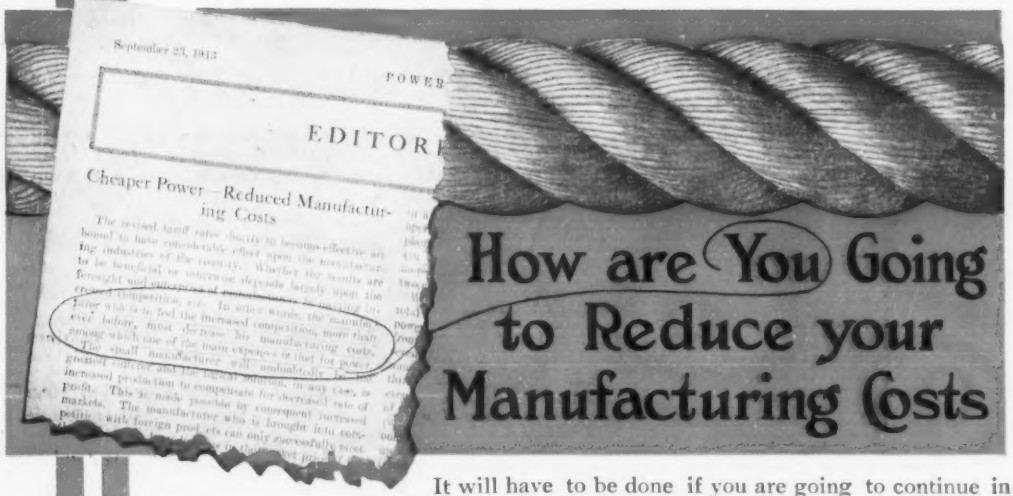
In several large mills equipped with humidifiers of other makes, we have entirely reorganized their system, installing our "High Duty" equipment with automatic humidity and temperature control and the average improvement during the succeeding twelve months test is:

A—Seconds reduced over 50%.
B—Production uniform day after day (No big jumps.)
C—Actual waste account halved.
D—Large saving in "invisible waste."

What Would Similar Results Be Worth To You?

STUART W. CRAMER

50 Church St. New York — Charlotte, N. C. — Tremont Bldg. Boston, Mass.



It will have to be done if you are going to continue in business. Power is one of your main items of expense. Get and use *all* the power your plant produces by installing the most efficient and economical system of power distribution. Eliminate all waste—change power losses into power profits. It is important under any manufacturing conditions—imperative under the new tariff conditions. Rope Driving properly installed—properly operated will contribute more largely and effectively towards manufacturing economy than any other mechanical readjustment you can adopt.

Because—Rope Transmission saves power—applies it most efficiently—reduces power expense to rock bottom figures. Use

AMERICAN
TRANSMISSION ROPE

and make these results sure.

Any plant where transmission rope is used can effect needful economies by putting in "American." It works best—wears best. Will not stretch. No power lost through slippage—no time lost through break-downs. In-doors or out-doors it gives pefect service. Will out-last any other make—reduce renewal charges.

Made of best selected Manila hemp only—through and through. Subjected to careful testing and inspection. Outer yarns edged to withstand wear. Core and inner yarns treated with a special lubricant to eliminate internal friction. This lubricant works throughout the whole rope protecting and waterproofing it.

MANUFACTURERS—study the power question closely. It's to your advantage. Your existence as a manufacturer depends upon intelligent action *now*.

A Valuable Book—Free

Let us have your name and address and it will give us pleasure to mail you FREE our "Blue Book of Rope Transmission." It may help you to solve your transmission problems. It treats the subject fully and contains much valuable information. Write for it to-day. 9

We Ship Without Delay—on Telegram if Necessary from either point of manufacture

American Manufacturing Co.
Dept. T
Brooklyn, New York City

QUALITY QUALITY

St. Louis Cordage Mills
Dept. T
St. Louis, Missouri

Stop Paying for Power You Do Not Use

Every textile mill using old fashioned plain bearing hangers for line shafting is wasting from 50% to 75% of their total power consumption.

Constant danger of dripping oil which results in "seconds" is another big loss which may be attributed to the use of old style hangers.

These two expensive features may be eliminated and many savings effected by the use of

S K F

Self-Aligning Ball Bearing Hangers

ROLLING SUBSTITUTED FOR RUBBING contact in the bearings means a minimum of friction and the operation of the shaft at the highest possible efficiency.

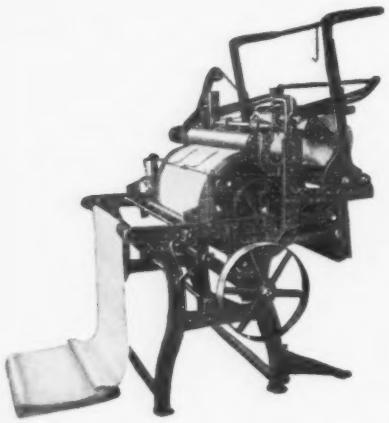
SELF-ALIGNMENT means the ability to compensate for shaft deflection or any inaccuracy of alignment, and is instantaneous and automatic in S K F Ball Bearings.

S K F BALL BEARING HANGERS require a minimum amount of lubricant at infrequent intervals. This means a big saving in time.

The hanger box is so constructed as to prevent absolutely any leakage of lubricant. This means a big saving in lubricant.

You've got to save power to make money nowadays. **Write for hanger Bulletin No. 10**

SKF BALL BEARING CO.
50 CHURCH STREET, NEW YORK



Parks & Woolson Machine Co
Springfield Vermont

BOARDLESS PACKAGING

Measures all fabrics and rolls for market on any ROUND core from one-half inch diameter up Core need not project outside cloth edges and may be withdrawn after rolling Trademarking included if wanted Especially adapted for heavy plushes, chinchillas, velvets and all difficult textiles

SMITH, DRUM & CO.

"BUILDERS OF THE BEST"

Labor Saving Machinery for Dyeing, Singeing and Finishing

HOSIERY

IN SULPHUR, ANILINE, DEVELOPED BLACKS AND COLORS
POWER SCREW PRESSES and MERCERIZING MACHINES

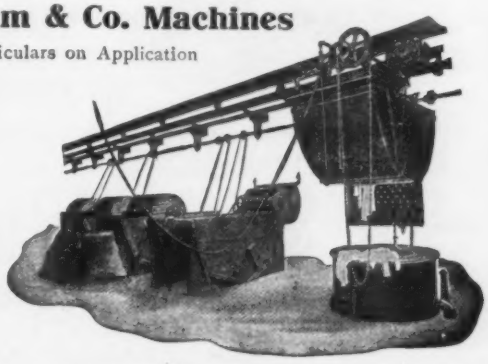
SAVE LABOR and **DYE STUFF** and do **BETTER WORK**
in your dye house by using

Smith, Drum & Co. Machines

Full Particulars on Application

Coral and
Cumberland Streets,
Philadelphia,
Pa.

Southern Agent
H. G. MAYER
Realty Bldg.,
CHARLOTTE, N. C.



LAWSON'S

Hope Foundry, LEEDS, England

BRANCH OF

Fairbairn Lawson Combe Barbour, Ltd.

MAKERS OF MACHINERY FOR

Preparing and Spinning

Flax, Hemp, Tow and Jute

Special Machinery
For the Manufacture of
Twines, Rope Yarns and Binder Twine

Good's Combined Hackling and Spreading Machines.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

Patent High-Speed Horizontal and Automatic Spinning Frames for Manila.

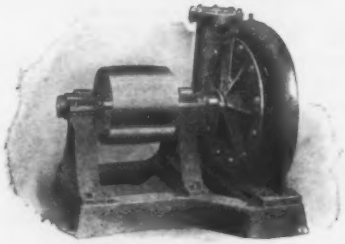
Improved Laying Machines.

Haskell-Dawes Tubing Twisters.

Brownell's Patent Twisting and Laying Machines for Twine.

N. B.—Complete Plans and Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.

Goulds Centrifugals Are Adapted for Every Pumping Service in the Textile Mill



These pumps are extremely simple in design; their first cost is low; and for a given capacity they require less floor space than any other type of pump.

Their large open water ways make them especially suitable for pumping size and similar substances.

Ask for bulletins which give complete details on Goulds Centrifugal Pumps.

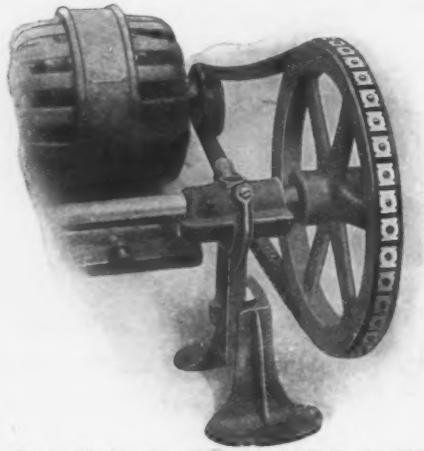
THE GOULDS MFG. CO.

LARGEST MFR. OF PUMPS FOR EVERY SERVICE

62 WEST FALL STREET - - SENECA FALLS, N. Y.

Branches and Agencies in Principal Cities

Peerless V Silent Chain Drives



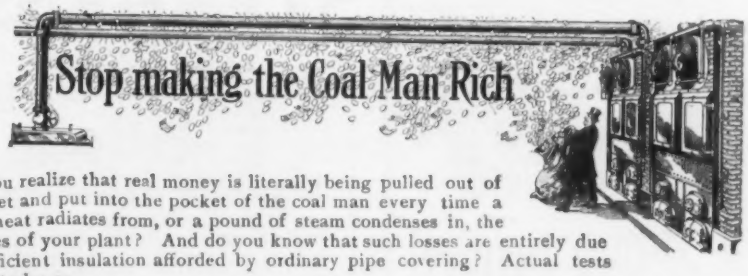
Sewing Machine Line Shaft with a H. P. Peerless V Belt

Are absolutely noiseless in operation. Can be operated on very close centers. Are not in any way effected by moisture, dust, grit or lint. And owing to the principle of the wedge being fully utilized, slippage is avoided, making a positive drive.

If you are bothered with transmission troubles send for full information and let us solve them for you.

PEERLESS V BELT CO.

NEW YORK CEDAR RAPIDS, IA. CHICAGO



Do you realize that real money is literally being pulled out of your pocket and put into the pocket of the coal man every time a degree of heat radiates from, or a pound of steam condenses in, the steam pipes of your plant? And do you know that such losses are entirely due to the inefficient insulation afforded by ordinary pipe covering? Actual tests *prove* this to be so.

You can eliminate nearly all this loss because *actual tests prove* that *over* 75% of such losses can be prevented by the almost perfect insulating efficiency of

J-M Asbesto-Sponge Felted Pipe Covering

This covering is the most efficient insulator because it contains the greatest number of "dead air" cells. And "dead air," you know, is recognized by engineers everywhere as the most efficient insulator.

J-M Asbesto-Sponge Felted Pipe Covering is made of many layers of thin felt composed of pure Asbestos fibre and finely ground sponge. It is tough and flexible, so that vibration, moisture, heat or rough usage, will not cause it to break, crack, crumble, or lose its insulating efficiency. Absolutely fireproof. Can be taken off and replaced without injury.

Write our nearest branch for sample, interesting test data and Catalog No. 100

H. W. JOHNS-MANVILLE CO.

Albany Buffalo Cleveland Indianapolis Louisville New Orleans Philadelphia Seattle
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Above All Others

as a protection for brick and cement is the

Bay State Brick and Cement Coating

It does not destroy the distinctive texture of concrete and becomes a part of the material itself. It is specified and used by the largest architects, contractors and builders everywhere.

It is suitable for mill construction, private houses, hotels, bridges, or wherever concrete is exposed to moisture. It is endorsed by the National Board of Fire Underwriters as a fire retarder; comes in many shades.

Bay State Steel Coating

Protects as well as decorates iron and steel structures. A special rust preventative to be used under the finishing color to prevent the slow oxidizing action caused by moisture. Address for Color cards and new Booklets K of both Coatings, made and sold by

WADSWORTH, HOWLAND & CO., INC.

Paint and Varnish Makers and Lead Corroders

82-84 Washington Street - Boston, Mass.

New York Office, 101 Park Ave., at 40th St.

Truck ability proved in cross country runs

The Paramount Knitting Company of Waupun, Wisconsin, uses its 3-ton Kissel-Kar Truck almost exclusively in cross-country work. The roads travelled are mostly unimproved and to cover the territory requires a sturdily constructed truck with a powerful motor.

The KisselKar Truck fulfills its mission in this case to the enthusiastic satisfaction of the Paramount Knitting Company. It is the same story with textile manufacturers and in kindred lines wherever wisdom has stepped in and dictated the selection of KisselKar Trucks.

KISSELKAR TRUCKS

SIX SIZES

1500 lbs., 1, 1½, 2½, 3½, 6 tons

There are four all important elements to be considered in the selection of a motor truck. 1st—the construction and *record* of the truck. 2nd—its adaptability to the duty required of it. 3rd—the permanency and responsibility of the makers. 4th—the facilities to give thorough service.

Investigate the KisselKar Truck and the written KisselKar Service Guarantee to owners. Write for illustrated portfolio.

Kissel Motor Car Company

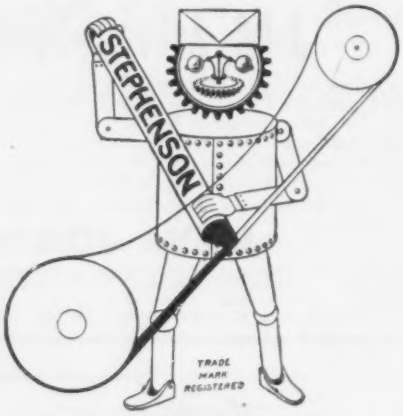
528 Kissel Ave., Hartford, Wis.

New York, Minneapolis, Chicago, Philadelphia, Milwaukee, Los Angeles, San Francisco, Oakland, Dallas, Boston, St. Paul, Kansas City, and over 300 other leading points.

STEPHENSON

Bar Belt Dressing Prevents Waste of Power and Fuel

Because it stops the belt from slipping and causes it to transmit all the Power without being made so tight as to cause unnecessary friction.



This Registered Trademark Is Your Protection

It appears on each stick of Genuine Stephenson Bar Belt Dressing—the dressing that has held to its uniform quality for 23 years.

This belt dressing surpasses liquid preparations, for there is absolutely no waste in applying it to the belt, and it is put up in sticks or solid form, so that it can be carried about in the tool-box. For these reasons—

1 Pound Lasts as Long as 2 Pounds of Any Liquid or Semi-Liquid Dressing.

There are two brands, Red Label for leather belts, Green Label for rubber, canvas, or balata belts.

Prices, literature and sample sent to any mill on request.

Stephenson Mfg. Co.

Main Office and Works,

Albany, N. Y.

Responsive Control An Advantage

Positive, non-vibratory construction is a cardinal feature of all Schaum & Uhlinger Hydro-Extractors. Of no less importance is their ***responsive control.***

Tub after tub of materials can be separated in the shortest possible time with this machine, because it gets a quick start, soon attains full speed and is quickly brought to a stop by a powerful toggle brake. The

Schaum & Uhlinger Hydro-Extractor

is the choice of the men who are responsible for getting the work done and ***done right.*** The proof of its success lies in the fact that so many of these machines have been installed in plants all over the United States.

Send a postcard today for your free copy of "Centrifugal Extraction" — no obligation.

Schaum & Uhlinger, Inc.
204 Glenwood Avenue
Philadelphia, Pa.

THE STABILITY OF THE REVOLVATOR

SOME people think the Revolvator will tip over. It might look that way, but the Revolvator is so designed that any load that will balance upon the platform will not tip the machine over.

For instance, the Ft. Wayne Corrugated Paper Co. thought the machine would tip over. Here's what they wrote to us on January 11th:—

"Gentlemen:

We have your favor of the 2nd with reference to the new Revolving machine we purchased from you some time ago. The machine is O. K. except that we have to be careful at times on account of tipping. We find that the machine will tip under certain conditions, otherwise it is O. K.

We wanted to find out more about under what conditions it would tip, so we asked them to give us a little further information. On the 16th of January they wrote us as follows:

"Since writing you I have taken the matter up myself and am well pleased to advise that the information given previously was erroneous. At any rate I was unable to discover any conditions whereby the elevator would tip.

"Our foreman in the shipping department simply thought it would, but after questioning him we found that it never did tip over."

Now we're willing to guarantee that the machine will not tip over if properly used. Have you any cases, bales, boxes, barrels, etc., in your plant that you want to compactly stow? Then ask us if the Revolvator will do it. Anyhow ask for a copy of our book W18, "Scientific Tiering."

N. Y. Revolving Portable Elevator Co.

349 Garfield Avenue Jersey City, N. J.

More Space—Fewer Men—Less Damage

Don't these three factors have a big effect on storage costs?

More Space—because boxes, bales and goods of any kind can be piled clear to the ceiling in a systematic manner.

Fewer Men—because you eliminate the straining of four or five men necessary to raise a heavy case a few feet, and substitute one man and possibly a helper, easily placing the heaviest packages as high as necessary.

Less Damage—in reality, *none*—no more cracked corners or split sides on cases, no more torn or trampled bales. Box or bale is easily raised to level of row and pushed off the rollers on to the pile.

In Your Own Factory no investment can approach this machine in the proportionate saving it will make for you. Give up your old methods, displace five men with one or two, increase your storage capacity 50%, and cut handling costs in half.

You ought to know about the

ECONOMY·STEEL TIERING·MACHINE

Economy Engineering Company
413 S. Washtenaw Ave., Chicago, Ill.

Write today for Booklet No. 16
It shows how some of our machines look in actual service

THE GEB PATENT TENSION CONTROLLER

Patented Nov. 26, 1907; Dec. 20, 1910

For Apperly Feeds. Will Expand 1½ Inches

An Efficient Device for Changing Speed of Traveller Without Stopping Card or Apperly Feed

We take pleasure in calling the attention of woolen manufacturers and other users of diagonal or intermediate card feeds to the above attachment. The chief advantages are as follows:

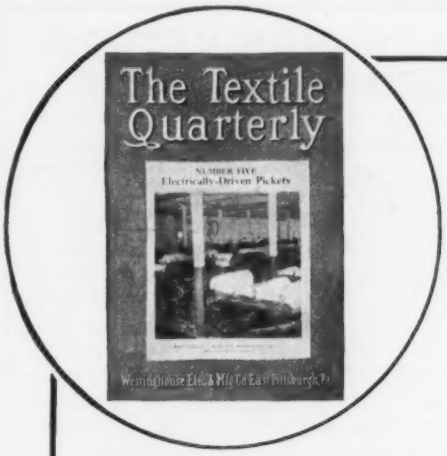
1. NO MORE STOPPING CARD to adjust traveller speed.
2. NO MORE BOTHER, INCONVENIENCE AND DELAY in putting laggings of leather, yarn or twine on the traveller pulley or taking them off.
3. INCREASE OF PRODUCTION by reason of the cards running continuously. The tension on the drawing or sliver can be KEPT RIGHT and therefore the drawing will break seldom or never, and if it does break it will take much less time than heretofore to start and readjust speed.
4. BETTER WORK FROM CARDS. When the tension on drawing or sliver is wrong, a bad feed is the result and uneven yarn. With this attachment the tension can be kept just right.
5. REDUCTION IN WASTE. Wrong tension, causing breaking of sliver or bad feeds, makes waste. This is eliminated.

Practically without exception the manufacturers who have tried this device have unqualifiedly approved same. We have never seen such a unanimous lot of testimonials about a new thing. We believe that it meets a long-felt want and that it will soon be universally recognized as indispensable.

The attachment consists of an expanding pulley permitting a change of two inches in diameter by simply turning a hand wheel or nut without stopping feed, and of a specially constructed bracket which will fit easily on any intermediate feed and allows a change in the position of the pulley to take up slack in belt, (or the opposite), caused by change in diameter of pulley. All the parts are substantially made and the pulley is provided with a flange to keep belt from slipping off.

We solicit your order to equip your APPERLY feeds with this attachment. It will pay for itself many times over in a short time.

GEO. S. HARWOOD & SON, 53 State St., Boston, Mass.



This Publication is of Vital Interest to Every Textile Man

Because it tells him how he can increase production without increasing costs.

It forms the best obtainable exposition of the motor drive of textile machinery—the reasons for installing motors, the various methods of drive, and the results obtained.

The following numbers have been published:

1. **Motor Drive in Cotton Spinning Mills**
2. **Motor Drive for Worsted and Woolen Looms**
3. **Motor Drive in Knitting Mills**
4. **Motor Drive in the Silk Industry**
5. **Electrically Driven Pickers**
6. **The Illumination of Textile Mills**

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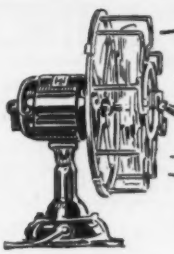
Member Society for Electrical Development "Do it Electrically"



Do Your Pulleys Fan the Air?

If the blades of an electric fan were straightened so as to *cut* the air, the fan could be run at much less cost. Imagine the air resistance of fifty, one hundred or more pulleys, not constructed with special attention to air resistance. Calculate the *unnecessary* power cost. Eliminate needless expenditure by the installation of

"American" Steel Split Pulleys

The "American" Pulley "A" braced arms (edge on) give *least air resistance*, at the same time, perfect rigidity, trueness and strength. This is but *one* of the "American" power saving features.

Write for "Factors of Energy," a useful little book.

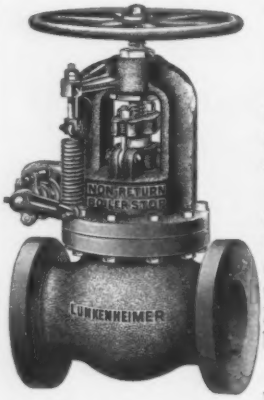
THE AMERICAN PULLEY COMPANY

OFFICE AND WORKS: PHILADELPHIA, PA.

Warehouses: New York, Grand Sts.; Boston, 165 Pearl St.; Chicago, 124 S. Clinton St.

Patented

DEALERS EVERYWHERE



LUNKENHEIMER NON-RETURN SAFETY BOILER STOP VALVES

In any steam plant where two or more boilers are installed in battery, the outlet from each boiler where same is connected to the header, should be provided with a **Lunkenheimer Non-Return Safety Boiler Stop Valve.**

Should the pressure in one of the boilers suddenly decrease, caused by an accident, a **Lunkenheimer Non-Return Safety Boiler Stop Valve** is guaranteed to close immediately and prevent the steam from the other boilers of the battery entering and discharging through the disabled one. Danger to life and property is greatly lessened, and as the plant can be operated with the other boiler, or boilers, without interference, considerable time and money are saved.

Chattering of the disc, caused by the fluctuation of the steam pressure is prevented by an ingenious outside spring arrangement.

Lunkenheimer Non-return Safety Boiler Stop Valves are exceptionally strong, durable and reliable. All parts subjected to wear are renewable. Made in five different combinations of material to suit the requirements of various conditions of superheat and high pressure, and to meet the specifications of engineers who may differ as to what is best suited to the purpose.

"MOST supply houses sell them--yours CAN--if they DONT or WONT--tell US"

Write for catalogue

THE LUNKENHEIMER COMPANY

Largest Manufacturers of High Grade Engineering Specialties in the World

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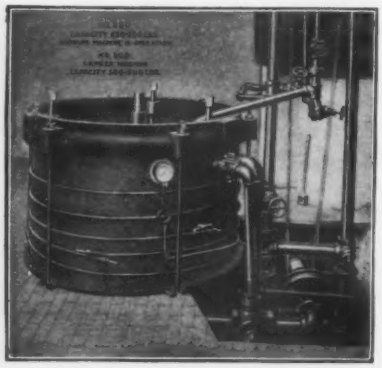


UP TO THE MINUTE

Wool and Worsted Top Dying

IN THE

PSARSKI DYEING MACHINE

PRACTICAL—ECONOMICAL—THOROUGH

UNIFORM COLOR

Dyes Wool and Tops—100 per cent. of Batch—absolutely level color throughout

NO FELTING

The Mass—Dormant While Dyeing—Cannot be Felted. Fibre comes out as Alive—Soft—Elastic and Spinable as it was Before Dyeing

DYES LOOSE WOOL

Acid Colors	2,000 pounds per day
Top Chromed Colors	1,500 " "
Bottom Chromed Colors	1,000 " "

DYES TOPS

Fine Wool	500 pounds per batch
Coarse Wool	800 " "

THREE BATCHES PER ELEVEN HOUR DAY

Tops are packed rapidly and easily. No special system or building. Tops are dyed uniform color throughout

NO FELTING—NO RE-COMBING—NO ADDITIONAL NOILS

SAVES 5 TO 10c PER POUND OVER OTHER MACHINES

SAVES 90 PER CENT. STEAM OVER HAND KETTLE OR REVOLVING MACHINES. SAVES DYES—LABOR—WATER

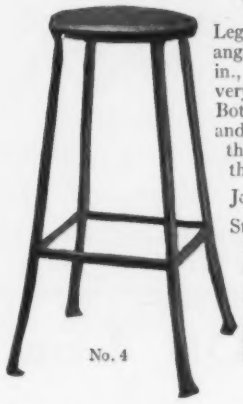
IS SIMPLE—STRONG—COMPACT—DURABLE—PRACTICALLY NEVER NEEDS REPAIRS

THE PSARSKI DYEING MACHINE COMPANY

3167 Fulton Road :: :: :: :: **CLEVELAND, OHIO**

The Angle Steel Stool

ALL STEEL! (with Steel Seat)



No. 4

Construction

Legs—high carbon angle steel, ¾x¾x⅛ in., making them very rigid and strong. Bottom of legs strong and smooth, allowing them to set level on the floor.

Joints—Riveted.

Stretchers—Flat steel, ¾ by 3/16 inch.

Seat—Pressed Steel, highly finished enamel, 12 in. diameter.

Net Prices

Height	Per Dozen
20 inches	$11.00
22 inches	11.50
24 inches	12.00
26 inches	12.50
28 inches	13.00
30 inches	13.50

No. 4 with back is our No. 44. Add $4.00 per dozen to price quoted above.

We also make chairs and three legged stools.

WE MAKE STOOLS TO ANY HEIGHT YOU MAY DESIRE.

STEEL STOOL WITH SPRING STEEL BACK

This is Our Improved Modern Stool

Made with high carbon angle steel legs. It has a **13-inch hardwood seat,** mahogany stained, and the entire framework is nicely finished in dark green enamel. The backs are double braced and adjustable, with a simple motion they can be raised from 10 to 16 inches.

Frame construction same as No. 4.

Net Prices

Height	Per Dozen
20 inches	$16.00
22 inches	16.50
24 inches	17.00
26 inches	17.50
28 inches	18.00
30 inches	18.50

No. 11 without back is our No. 1. Deduct $4.00 per dozen from price quoted above.

Do you need tool trucks, racks or merchandise conveyors?

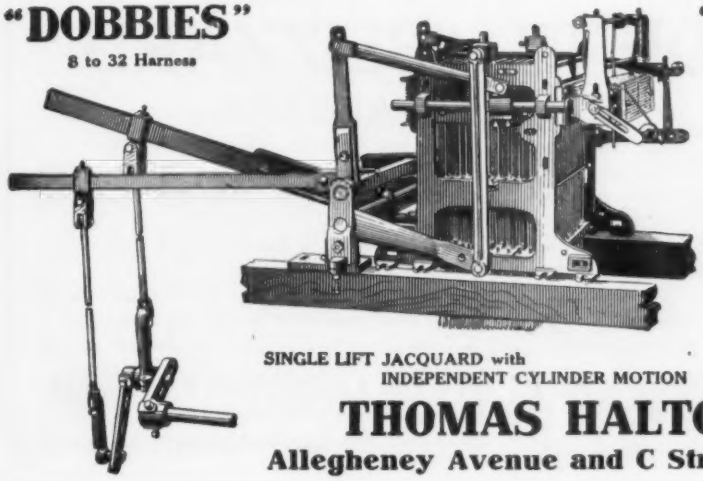
No. 11

Send for Catalogue No. 114.

Angle Steel Stool Co., Inc., Otsego, Mich.

"DOBBIES"

8 to 32 Harness



"JACQUARDS"

208 to 2608 Hooks

ALL TYPES

HARNESS BUILDING

SINGLE LIFT JACQUARD with INDEPENDENT CYLINDER MOTION

THOMAS HALTON'S SONS

Allegheny Avenue and C Street, Philadelphia

Breton Oils

For wool are of definite and uniform quality. Over quarter of a century of hard work and constant attention to details has brought and keeps Breton Oils at the front. A grade for every requirement.

Sold subject to trial and approval.

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The "BODDEN" Flyer

For QUALITY OF FINISH
For QUANTITY of PRODUCTION
HAS STOOD THE TEST OF YEARS

Sole Agents for U. S. A.

Thomas Mayor & Son, Olney Street, Providence, R. I.

DIETZ "BLIZZARD" MILL LANTERN

(Approved by Insurance Inspection Department)

This lantern represents the highest type of WATCHMAN'S LANTERN on the market. Burns kerosene oil. Made in two sizes:

No. 1—13¾" High, ⅝" Wick, 6 Candle Power
No. 2—14¾" High, 1" Wick, 10 " "

Holds sufficient oil to burn 10 hours

Locking attachment prevents your watchman tampering with flame

Dietz Mill Lanterns are for sale by all dealers in hardware and mill supplies

DIETZ LANTERNS

R. E. DIETZ COMPANY
Largest Makers of Lanterns in the World

DIETZ LANTERNS

GREENWICH AT LAIGHT STREET - - - NEW YORK CITY

The INTERNATIONAL

Distributes 15 cubic feet of **fresh air** per minute and from 1 to 4 gallons of water per hour as required.

25 Per Cent More Moisture than any other Humidifier gives

No return pipes to become clogged; no danger of damage by water; no attention required.

Costs no more than any other.

No cost for maintenance.

International Moistening Company

Jackson Bldg. Providence, R. I.

".....it showed no wear whatever"

C. MATTISON MACHINE WORKS

AUTOMATIC MACHINERY FOR TURNING WOOD. CUTTER HEADS & KNIVES.

BELT SANDERS AUTOMATIC & HAND STROKE FOR FLAT & IRREGULAR SURFACES

BELOIT, Wis. Oct. 21, 1912.

Royersford Foundry & Machine Co., Inc.,
52 North 5th Street,
Philadelphia, Pa.

Gentlemen:-

In reply to yours of the 19th, will say that we are pleased to report that your "Sells" Roller Bearings are giving perfect satisfaction.

We had occasion to move a Hanger the other day and when the box was taken off it showed no wear whatever, and was in perfect condition. This box had been in continuous service for over a year.

Yours truly,

C. MATTISON MACHINE WORKS.

LETTERS like the one above from the Mattison people ought to convince any non-user of roller bearings of the genuine serviceability of SELLS Roller Bearings.

Evidence, you know, is always more convincing when it comes direct and the fact that

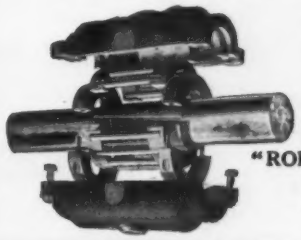
SELLS Roller Bearings

are so well advertised by the users themselves is pretty good reason why any doubter should at least investigate the proposition for himself.

We have first-hand testimony that SELLS BEARINGS have reduced the friction load from 25 to 50 per cent—big figures, to be sure, but *we can prove them.*

Will you put us to the test?

Royersford Foundry & Machine Co.
56 North Fifth Street
PHILADELPHIA



Power Transmission Machinery, Punching and Shearing Machines, Emery Grinders, and **"ROLLERINE"** the high grade lubricant

WILLIAM FIRTH

558-559 John Hancock Building, 200 Devonshire Street, Boston, Mass.

SOLE IMPORTER OF

ASA LEES & CO., Limited

TEXTILE MACHINERY

OF EVERY DESCRIPTION FOR COTTON, WOOLEN AND WORSTED.

Sole Agents for

JOSEPH STUBBS, Gassing, Winding and Reeling Machinery for Cotton, Worsted and Silk.
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Also Agents for

JOSEPH SYKES BROS., Hardened and Tempered Steel Card Clothing for Cotton.
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Manufacturers of Warp Stop Motions — Dustless Card Strippers

BIRCH COTTON FINISHING MACHINERY

Scutchers	Washing	Sewing
Angular Guides	Dyeing	Singeing
Conical Openers	Squeezing	Mangles
Stretchers	Folders	Engines
Open Soapers	Rollers	Napping

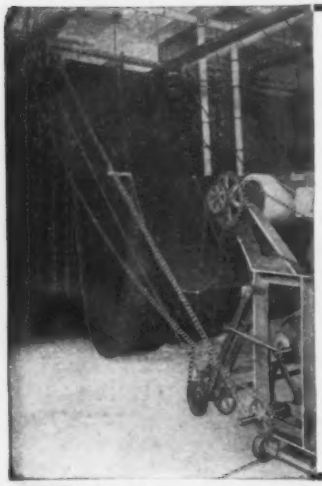
THE BIRCH WOOLEN WORSTED FINISHING MACHINERY

Crabbing	Steam Finishing	Cloth Openers
Piece Dyeing	Steam Blowing	Folders
Singeing	Sewing	Squeezing
Tentering	Tacking	Napping

BIRCH BROTHERS

ALBERT BIRCH, Textile Mechanician

SOMERVILLE MACHINE WORKS, SOMERVILLE, MASS.



RELIANCE CLOTH HANGING MACHINE

For shrinking woolen, worsted and cotton goods; drying oilcloth, or waterproof cloth, and curing rubberized cloth.

Can be attached to any machine or operated separately

In use by the United States Quartermaster department for shrinking uniform cloth.

Write for catalogue and prices

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American Moistening Company

120 FRANKLIN STREET, BOSTON, MASS.

Received the HIGHEST AWARD on recommendation of the FRANKLIN INSTITUTE for

"SIMPLICITY AND ORIGINALITY OF DESIGN"

Is the largest manufacturer of HUMIDIFIERS in the world. The last twenty years receiving the HIGHEST AWARD in this country and Europe for its AIR-MOISTENING SYSTEM. EIGHT GOLD MEDALS and others.

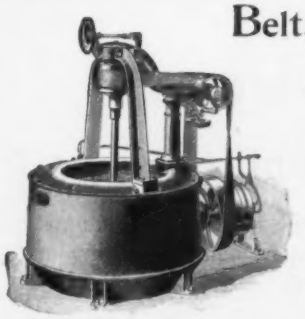
The Only Perfect System of Air Moistening

Has Been Adopted by the Representative Manufacturers of this Country.
The only System adopted in the Textile Schools. Write for booklet "T" on Humidification.
Legal proceedings will at once be taken against infringers and users of infringements.

JOHN HILL, Southern Representative, 510 Third National Bank Building, ATLANTA, GA.

Tolhurst Self Balancing Extractors

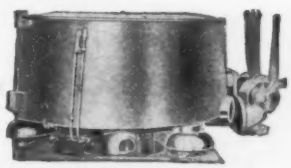
Belt, Engine and Motor Driven



Over Driven Extractor

DYE TUBS AND TANKS

Reel Dyeing and Bleaching Machines Washing Machines

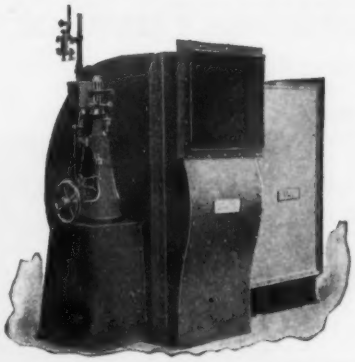


Open Top Extractor

TOLHURST MACHINE WORKS, Troy, N.Y.
FRED H. WHITE, Southern Agent, Realty Bldg., Charlotte, N.C.

INCREASE YOUR TENTER FRAME OUTPUT

With a Fan and Heater Coils



The Apparatus required is very simple.
The results decidedly increase the Output and Profits from each machine.
The New Tariff presents New Problems—Maximum Economy is the best answer
Write us today for special information on this subject.

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400 Howard St. Watertown, Mass.

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Latest and most approved methods of

POWER TRANSMISSION
by
BELTS, ROPES, OR GEARS

Write for full information

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Salem, Mass.

Elevators Especially Adapted for Textile Mills

Protect Yourself Against Liability Laws

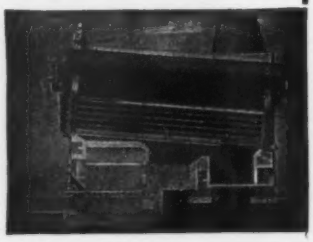
We make a specialty of attaching to Elevators, already in use, Automatic Folding Hatch Doors, Semi and Full Automatic Gates, Automatic Locking and Stopping Devices, Automatic Car Safety Attachments, etc.

Send for Illustrated Catalogue and Estimate

The Murphy Automatic Smokeless Furnace

Burns Slack with Great Economy

The Murphy can be installed under any type of fire-tube or water-tube boiler and to units of any size.



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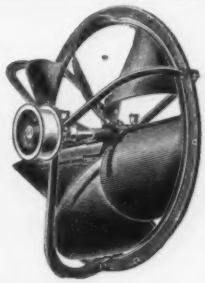

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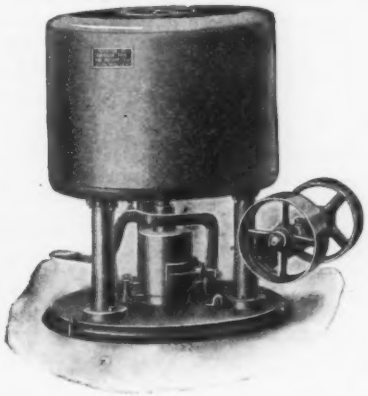

The American Tool & Machine Co.
BOSTON
INCORPORATED 1864

The Textile Industry of the United States leads the world in the production of low priced colored cotton fabrics of great merit and intrinsic value for the masses.

ONE of the chief contributing causes for the large increase in the production of colored cotton goods in the United States is the introduction of the "Fast Colors."

It was only a few years ago that consumers were afraid to buy colored cotton goods especially in light shades, such as Blue, Helio, etc., because the colors would not stand up under laundering and exposure to light.

Those who purchased colored cotton goods bought chiefly the dark shades in the hope that the fading would be gradual.

One of the advantages of colored cotton fabrics, besides being light and cool, is the feeling of cleanliness that comes from the fact that they can be laundered many times and without injury to appearance.

Many bought "White" when they would have preferred colored goods because they knew from sad experience that the colored effects were unsightly after a few launderings.

When Indanthrene dyed cotton goods began to appear on the market a few years ago the trade was naturally reluctant to believe that a really fast color for cotton had at last been found, but the consumers gradually saw the difference and began to realize that colored cotton goods were really worth while, since they could be produced in colors which would practically out-wear the fabric.

Gradually this feeling of confidence grew in the minds of consumers generally with the result that a large impetus was given to the colored cotton goods trade.

The end is not yet, but already

America leads in the use of Fast Colors; another reason why American goods merit the preference.

BADISCHE COMPANY

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TEXTILE WORLD RECORD

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Official American Textile Directory

Published annually, in two editions. Office, Large Size, **$3.00. Travelers',** Flexible, Smaller, **$2.00.**

A Complete Directory of Cotton, Woolen, Knitting, Silk, Flax and Jute mills of the United States and Canada, together with the Dyeing and Finishing Works, Bleacheries, Print Works and other Textile Establishments; about 7,000 in all. Full information is given about each mill in almost every instance, viz., the name of the company or firm, names of officers, agent, superintendent, the character of goods made, the machinery equipment, i. e., the number of sets of cards (or combs), the number of spindles, number of looms; whether the mill uses steam or water power, whether there is a dye house or not, the names of the selling agents or if the mill sells direct. All this and much other information contained in this book is arranged in a way to be instantly accessible.

Vest Pocket Editions of the Directory are published in three sections, viz.: the New England States and Canada; Middle States; Southern and Western States. The price of these is **$1.00** per section.

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It contains full reports of every knitting mill in the United States and Canada, giving capitalization, names of the officers, including superintendent and buyer; kind of goods made; number of knitting machines, whether latch or spring needle; number of sewing machines; whether the mill dyes or bleaches or finishes; kind of power; number employed; selling agent; kind of yarn bought; lists of the jobbers, manufacturers' selling agents, commission merchants, department stores and large retailers handling knit goods and the name of the person in charge of the knit goods department. List of dyers, bleachers, finishers, printers, etc., making a specialty of knit goods work. Special copyrighted maps of the mill districts, showing the cities and towns where there are knitting mills. It is indexed so any town or mill may be quickly found.

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Produces the permanent white that does not turn yellow when goods are brought in contact with hot dry cans or when boxed up for long periods.

JOHN P. MARSTON
247 ATLANTIC AVENUE
BOSTON, MASS.

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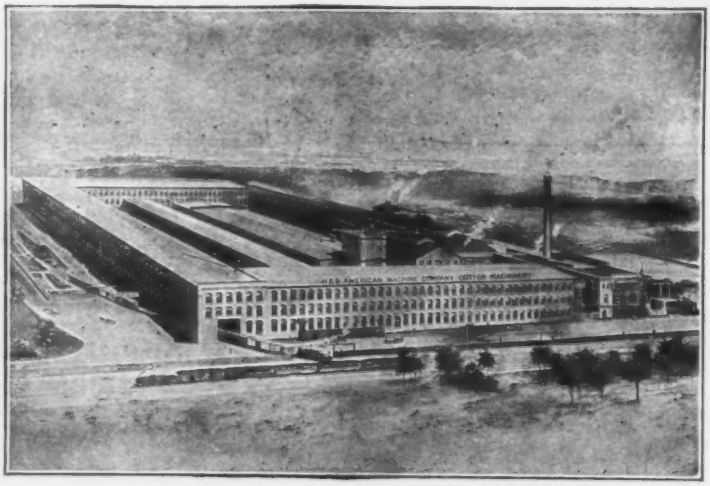
Correspondence

We solicit correspondence on textile subjects. Articles accepted will be paid for. Name and address must always be given, not necessarily for publication. Subscribers are invited to make free use of our Questions and Answers Department; correspondence is strictly confidential.

COTTON MACHINERY



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TEXTILE WORLD RECORD

DECEMBER, 1913

Monthly Comment.

An American Merchandise Marks Act

Beginning with the Grosvenor "shoddy bill" of 1901, we have for twelve years left no opportunity unimproved to expose the absurdity of the bills that have been introduced in Congress to require the labling of textiles to show the materials of which they may be composed. These impracticable measures have been fathered by irresponsible men, ignorant of textile construction, too indolent or too much engrossed in cheap politics to study the subject, but desirous of gaining popularity by posing as the defenders of the consumers, who have the votes. While exposing these fake bills, of which the Grosvenor, Willis, Murdock and Lindquist bills are fair samples, we have steadily advocated the only practicable and efficient method of protecting the consumers against misrepresentation and fraud in the purchase, not only of textiles, but of all other commodities, that is, by legislation based on the principle of the British Merchandise Marks Act.

Our editorials on this subject beginning with January, 1902, have been sent to members of Congress at the time of their publication. No sound objection to our arguments has ever been advanced, and it is gratifying to learn that our campaign of education has not been in vain. Legislation of some kind on this subject now seems certain. A few weeks ago it was announced that President Wilson had held a conference with the leaders in Congress and that they had decided to support a bill more general in scope and aimed at fraud and misrepresentation on all lines of goods. Chairman Adamson of the House Committee on Interstate and Foreign Commerce has appointed a subcommittee at work framing the measure, and in announcing the legislative plans made this statement:

> Bills have been introduced on different phases of this matter. Instead of popgun bills, we purpose to enact a general measure. It will be to some extent modeled after the British frauds act.

It is all very well for time serving politicians to introduce popgun "pure textile" bills in order to gain a cheap and passing popularity that may count on election day, but when men on whom rests the responsibility for enacting and executing laws, are called upon to act, they generally give heed to facts, reason and common sense. This is what will in all probability happen when an American Merchandise Marks Act is enacted, and it is gratifying to know that in following the course of reason and common sense those responsible for legislation must follow the advice of this magazine.

When a short time ago President Wilson signed a bill of which he seemed rather proud, he made a little speech in which he told how covetous he was of honor, quoting these lines of Henry V at the battle of Agincourt: "If it be a sin to covet honor, I am the most offending soul alive." This quotation by the President was not entirely apropos to the occasion, because the honor

that Henry V coveted was to win a victory against overwhelming odds, and the quotation was from a rebuke to an officer who wanted reinforcements. The President was taking the honor of an achievement won by the work of others, much of it done before he began his now three year old excursion into politics. If, as we hope, he is called upon to sign a bill modeled after the British Merchandise Marks Act, we trust he will re-read his Henry V and allow some of the honor of the achievement, if not the pen with which he signs the bill, to pass to the few who for many long years have opposed the overwhelming sentiment in favor of "pure textile" laws patterned after the pure food act, and have made the task of Congress and the President easy in 1914 by exposing the wrong principle of such legislation and pointing to that which is right.

The Hair of the Angora Goat

The fifteenth congressional district of Texas is located at the southernmost part of that great State on the V-shaped point that borders the Rio Grande on the west and the Gulf of Mexico on the east. The population is relatively small, only 252,906, but the area, 40,807 square miles, is of imperial dimensions. The district is two-thirds as large as New England, almost exactly the size of Ohio, one-third larger than Scotland and five times the size of Massachusetts. It is chiefly remarkable at the present time, however, by reason of its being represented in Congress by a stalwart and practical Democratic protectionist, the Hon. John Nance Garner, who, regardless of the mere wording of the national or local platform on which he runs for office, has the courage to stand firm for protection to American industry after he has obtained office.

During the recent revision of the tariff Congressman Garner was the enthusiastic and determined leader of an influential group of Democrats who stood for practical protection and succeeded in keeping a duty of 15 per cent. ad valorem on mohair despite the opposition of the Senate and the demand from the White House and State Department for free wool The Hon. Sereno E. Payne stated the case rather bluntly on April 28 in these words:

> They raise some goats in the United States. There are 3,000,000 of them. They say that 2,999,999 of them are in Texas and Texas must have a duty on goat hair. Texas is quite a State, and has a good many Democratic Representatives.

With human nature as it is, the practical support of either free trade or protection is best developed by self-interest. The world's center of tariff free trade in Manchester, Eng., because the vast majority of ten million people living within a 50-mile radius of that city find it for their interest to have raw materials and foodstuffs free of duty in England, the English manufactures free of duty in other countries. The producers of cotton and woolen goods in Lancashire and Yorkshire favor free trade, and the producers of mohair in Texas favor protection from the same natural motive, that of self-interest, or rather, self-defense. And it is from the same motive that the great majority in England is for free trade; and in the United States for protection. Members of Parliament and Congress reflect the prevailing sentiment. That the Hon. John Nance Garner and his Democratic allies of Texas were the true representatives of the mohair producers of his State is shown by the resolutions adopted by the National Mohair Growers' Association at the annual meeting at Dallas, Tex., on October 31. After electing U. S. Grant, Dallas, Ore., president; A. B. Collins, Laguna, Tex., vice-president, and J. E. McCarty, Stephenville, Tex., secretary, the association passed a resolution thanking Congressman Garner for his work in securing a duty of 15 per cent. ad valorem on mohair, and pledging their support to him "in all his political aspirations." The Democratic protectionists of Texas, led by Congressman Garner, point the way for protectionists of all parties in every State. The Texans united in a demand for moderate and fairly adjusted protection to their industry, and they obtained what they demanded in spite of overwhelming odds against them. Protectionists in other States can do likewise when they will.

The Austrian Combine of Cotton Spinners

The combine formed some months ago by the cotton spinners of Austria to fix prices for their products has gained many new recruits. At the last meeting on Oct. 29 the membership represented an annual production of 194,000,000 pounds of yarn, as compared with a production of 135,000,000 pounds represented by the spinners who joined the combine at its organization. By a unanimous vote it was decided to continue the fixed price agreement in force until June 30, 1914. Plans were also approved for promoting the export of cotton yarn produced by members of the trust.

—:—

British Colonial Cotton

The meeting of the British Cotton Growing Association on Nov. 6 was in marked contrast to the meetings held by that organization in the first few years of its existence. The exhuberent optimism and unyielding confidence of youth have disappeared and in their place we find a matter of fact statement of accomplishment and a businesslike caution in handling propositions for the development of cotton growing in untried fields. The purchases of cotton in Gagos for the nine months ending September amounted to 13,429 bales, a gratifying increase over the corresponding period of 1912 when only 3,968 bales were bought, and as compared with 11,762 bales in 1909. Northern Nigeria yielded 1,532 bales for the nine months of this year, as compared with 2,326 bales for the same period in 1912. The production of cotton in East Africa has become so large that the British East Africa Corporation is calling for $225,000 of new capital to handle the crop. The total amount of British colonial cotton sold in September and October of this year was 18,689 bales valued at £241,000.

The new proposal for developing the growing of colonial cotton came from Australia in the form of an offer from the Queensland Government to guarantee a minimum price for cotton if the Association would undertake to establish the industry in that Commonwealth. Referring to this offer J. A. Hutton, chairman of the Association, said:

I must, however, point out that the Committee do not think that a mere offer to guarantee a minimum price is sufficient, for before one would be justified in encouraging any farmer to spend money in growing cotton it is essential that certain experimental work should be carried out with various types of cotton and in different districts in order to prove which type of cotton is most suitable for each district and which are the best methods of cultivation, and also whether or not the cotton can be produced on a commercial basis —or, in other words, whether the farmer can make money out of it. It has been shown that cotton of good quality can be produced in Australia, and it is this question of whether it can be grown on a commercial basis which has to be ascertained. Only by actual experiment can this be done, and the experiments should be spread over a period of not less than three years.

Chairman Hutton then discussed the different types of cotton in connection with the Queensland proposal:

Only experience will enable one to decide definitely which type will be most suitable. I may, however, state at once that there are two types which should not be encouraged—viz., Sea Island and perennial cotton. The market for Sea Island cotton is a very small one, and is already very fully supplied from the United States and the West Indies. As to perennial types, they may do well enough on a small scale, but, speaking from experience spread all over the world, in the long run their cultivation is not a profitable one, and the type of cotton, though suitable for mixing with wool, is not suitable for cotton-spinning. There is also the great disadvantage that they give every facility for the spread of cotton pests and diseases.

The other remaining types are Indian, Egyptian and American. Indian cotton is short, of very low value, and can therefore be ruled out at once. Egyptian does well under irrigation, but is hardly to be recommended as a rain crop, but it might be worth while trying a few small experiments. As regards American, we should hardly recommend the shorter stapled varieties owing to their low value, though these are undoubtedly the easiest to grow, and are heavy croppers. There are, however, many high-class varieties of upland cotton, some of which are worth as much as good Egyptian cotton, as for example Allen's Improved, Sunflower, Griffin, etc., and, as far as we can judge, this type would probably be most suitable for the country, though this can only be decided after two or three years' careful experimental work.

After considering the question carefully the Committee of the Association made the following offer to the Queensland Government:

(a) The Association will do all in their power to assist, either by advice or otherwise, and they will

contribute the sum of £100 per annum towards the cost of these experiments for a period of three years, dating from July 1, 1914.

(b) The Association will supply, free of charge, small quantities of seed for experimental purposes.

(c) The Association will report from time to time on any samples of cotton.

(d) The Association will superintendent the sale of any cotton or seed shipped to this country and will undertake to obtain the best possible price for such shipments.

(e) The Association will keep separate accounts for each shipper and will superintend the remittance of the proceeds of each lot of cotton or seed, and will pay the same to the account of the producer either in this country or in Australia.

(f) The Association will pay the ocean freight and will superintend the insurance of the cotton, and will, when required, arrange for it to be covered against all risks from the time it is weighed in from the fields up to the warehouse in Liverpool.

(g) The Association will, when required, make arrangements for financing cotton or seed by accepting bills drawn on shipment.

(h) The Association are prepared to supply ginning and other machinery, baling material, and other stores, on easy terms of repayment, and will give the buyer the full advantage of all cash and trade discounts.

(i) The Association will charge for the above services the following commission in addition to interest and other out of pocket charges: Cotton, 1 per cent. (including the broker's charges of 1/2 per cent.); seed, 1 1/2 per cent. (including the broker's charges of 1 per cent.); buildings, machinery, baling materials, etc., 2 per cent.

(j) For a period of three years, dating from July 1, 1914, the Association will guarantee a minimum price in Liverpool or London of 6 1/2d. per pound (less insurance, port, and other charges, which amount to about 1/2d. per pound) for all cotton forwarded to them for sale, and which shall have been produced from an annual variety grown from seed issued by the Government, and which shall be shipped in a clean and merchantable condition. Any surplus which may be obtained over the above-mentioned price of 6 1/2 d. per pound will be remitted to the planter. It is stipulated that this offer does not apply to any cotton grown from perennial varieties or from ratooned cotton.

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Foreign Competition in Cotton Goods

That thick and thin supporter of the low tariff policy of the present administration, the "Providence Journal," recently made this sapient comment on the competition of foreign cotton mills under the new tariff law:

> Whenever during the present year a cotton mill in this country has curtailed production by closing down, or running on short time, the action has been laid to the menacing influence of the Underwood tariff, and to the fear that the reduction of duties under it would let in a flood of foreign cottons. Naturally, if this were true, European mills, especially those of low-wage protective countries, ought to be running on full or extra time, turning out goods for the American market. It appears, however, that in both low-wage, protective European countries and higher-wage, shorter labor-day, free-trade England, factories are running or are planning to run on short time.

The new tariff had been a law just forty-six days when the "Journal's" editorial appeared, and at that time it is safe to say only a very few foreign merchants had learned what the new American duties on cotton cloth were. Nevertheless the "Journal" assumes the possibility of European cotton mills running on full or extra time filling orders from the United States. The development of new markets is a slow process, requiring many months before appreciable results can be expected. The exploration of the American cotton goods market by foreign mills is not likely to prove an exception to this rule, but the process will certainly be expedited by any depression in the cotton goods trade abroad.

Blinded by its political and economic prejudice the "Journal" points to the depression in European cotton mills as proof that the Underwood tariff is now so low as to encourage dangerous foreign competition, ignoring the fact that this newly arrived depression abroad brings with it the conditions that develop the evils of an adequate tariff in the United States. So long as foreign mills are fully occupied by orders from markets outside of the United States, they are not likely to menace the American industry. When the foreign mills run short of orders, however, and are searching for an outlet for their goods, the United States will become, not only a legitimate market, but a dumping ground for foreign goods. In this view of the situation the mills in foreign countries may be considered one competitive unit; those in the United States, another unit. The foreign cotton mills represent approximately 110,000,000 spindles; the mills in this country, 30,000,000 spindles. If the depression in foreign mills, whose significance the "Journal" so completely misconstrues, should develop into a settled shrinkage of 10 per cent. in their output, that would mean 11,000,000 idle spindles, equal to 36 per cent. of the 30,000,000 spindles in the United States. The proportion is small

when based on the capacity of the foreign industry, but it is a very large part of the American industry which is protected by the Underwood tariff. Under such conditions goods are dumped on the new market to keep the 11,000,000 spindles busy. That is the industrial possibility which it is the part of wisdom to face. That is what makes it so necessary to prevent undervaluation and other kinds of fraud under the new law; and that is what may make it necessary to call on the leaders in Congress to keep their promise to correct any defects in the adjustment of rates that may develop in the administration of the law.

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The Southern Cotton Corporation

In our comment last month on fostering the growing of cotton we referred to the plans of the Southern Cotton Corporation to secure as high a price for cotton as they can get, and stated on the authority of press dispatches that the Corporation had recently suffered a setback by the failure to obtain a license to do business in Arkansas. President George D. Wadley informs us that this report is incorrect, and that the Corporation is now at work in eight of the Southern States, including Arkansas. He sends us a copy of the correspondence between the insurance commissioner and attorney general of Arkansas regarding the press reports and the business of the Corporation. This correspondence is as follows:

Wm. L. Moose, Attorney General:

Dear Sir—Through the newspapers the statement has gone out that I, as auditor and insurance commissioner, have refused to issue a permit to the Southern States Cotton Corporation to do business in this state under the provisions of the act of March 28, 1913, commonly known as the "blue sky" law. In some instances it has been stated that permission has been revoked by me. These statements have probably grown out of the opinion rendered by you on the application of H. S. Mobley, president of the Farmers' Union.

Since your opinion addressed to Mr. Mobley concerning the contract of the Southern States Cotton Corporation I have received many inquiries about the matter. To all inquirers I have stated that I had not issued a permit, nor had permission been denied said corporation under the act of March 28, 1913.

No application has been made to this office by said corporation under the provisions of the act mentioned.

The records of the office of secretary of state show that the Southern States Cotton Corporation was incorporated under the laws of Alabama; that it complied with the incorporation laws of this state on November 1, 1912, and on that day the secretary of state issued his certificate reciting that fact. I am informed that it has been doing business in this state with an office in Little Rock and through agents in various portions of the state, contracting with the farmers.

In view of the many inquiries and as a matter of general information, I request your opinion as to whether the business proposed to be done as shown by said proposed contract and scrip "A" and "B," is in violation of the act of March 28, 1913. Copies of the contract and scrip are attached.

As the impression seems to have gone out in some quarters that a compliance by a corporation with the incorporation laws of the state releases it from the operations of the act of March 28, 1913, I request your opinion on that matter.

Yours truly,

(Signed) L. L. Coffman,
Auditor and Insurance Commissioner.

L. L. Coffman, State Auditor and Insurance Commissioner:

Dear Sir—I have received your letter of the 14th inst., enclosing blank printed copies of the contract of the Southern States Cotton Corporation, and what are termed Series A and B scrip issued by the said corporation in the purchase of cotton from farmers in this state. . . .

Provisions of Act

Sections 1 and 2 of the act provide in substance that every individual corporation, copartnership and company other than national banks or corporations not organized for profit, which shall sell or negotiate for the sale of any stocks, contracts, bonds or other securities, except bonds of the United States or some municipality, or notes secured by mortgages on real estate located in Arkansas, shall comply with the act by furnishing to the auditor and insurance commissioner certain information, under oath, concerning the individual or corporation who proposes to sell the securities, together with copies of the contracts, bonds, or other instruments which it proposes to make with or sell to its contributors.

You will observe that the act applies only to individuals or corporations who sell or negotiate for the sale of certain contracts, bonds or other securities. Its manifest purpose is to protect the citizen from investing in worthless stocks, bonds or other securities.

Judging by the copies of the contract and the scrip which the Southern States Cotton Corporation is issuing the said corporation is selling nothing, and proposes to sell nothing; but is endeavoring to purchase cotton only.

Without further elaboration, it is my opinion that the "Blue Sky Law" does not apply to this corporation, and that said corporation is under no obligation to comply with its requirements.

Very truly yours,

William L. Moose,
Attorney General.

The "Underwood" Gingham

The following telegrams, published in the Daily Trade Record of November 13, and which passed between F. B. Shipley, of F. B. Shipley & Co., importers of cotton goods at 49 Leonard St., New York, and Hon. Oscar W. Underwood, call attention to matters of special importance to the textile trade:

Hon. Oscar W. Underwood, Washington, D. C.
For many years I have sold a Scotch gingham which has retailed at 35 cents. The difference in cost under the Underwood bill because of the fixed stepping stones of retail prices now enable its retailing at 19 cents. I desire to name it Underwood gingham in your honor. Please telegraph if you consent. F. B. Shipley.

F. B. Shipley, 49 Leonard St., N. Y.
Appreciate your desire to name gingham after me. Am glad to have you do so.
O. W. Underwood.

Mr. Shipley's telegram is open to but one construction, that the lowering of the duty on this gingham from the Payne to the Underwood rate has enabled him to reduce the price to the jobber so that under the present methods of doing business in this country the cloth can now be sold to the ultimate consumer at 19 cents a yard instead of 35 cents, the price under the Payne law. As this is certainly important if true, we have made an investigation to determine the facts. First we analyzed a sample of the goods with the following result:

"Underwood" gingham, 31 1/2 inches wide. Boiled-off:

Grains per 1/300 sq. yd.	3.6
Threads, warp and filling, per inch	138
Average yarn number	38.3

The Underwood duty on this cloth is 15 per cent., regardless of the allowance for sizing, because the yarn number would call for the same rate even if all the sizing, 6 1/2 per cent., were included in the calculation. Under the Payne law the duty was 4 1/4 cents per square yard, or 3 3/4 cents per yard 31 1/2 inches wide. The Underwood duty, assuming a foreign value of 10 cents, is 1 1/2 cents per running yard. In other words, the duty on this fabric has been reduced 2 1/4 cents per yard, and, according to Mr. Shipley, this has made it possible to reduce the price to the consumer from 35 cents to 19 cents per yard.

Mr. Shipley's telegram is so worded as to connect the fixed stepping stones of retail prices with the tariff in bringing about this remarkable reduction in price. Under the fixed price system a change in the wholesale price may cause a disproportionate change in the price at retail, but no previous announcement has ever prepared the trade for the remarkable reduction in the price of the "Underwood" gingham from 35 to 19 cents as a result of a tariff reduction of 2 1/4 cents per yard.

When Mr. Shipley published the correspondence announcing the name and price of the "Underwood" gingham, he made the matter a proper subject for public criticism. Having said what he has to Mr. Underwood and the public, he should go farther and explain clearly by what legerdemain a saving of 2 1/4 cents to him is converted into a saving of 16 cents to the consumer. Not only protectionists, but Mr. Underwood himself, in whose honor the gingham has been named, have the right to expect that Mr. Shipley will clear up the doubt with which our figures surround the "Underwood" gingham.

Revision of Differences by New York Cotton Exchange

On Nov. 20, a committee of fourteen members of the New York Cotton Exchange held a meeting lasting three and a half hours for the purpose of fixing the differences on and off middling cotton by which deliveries and settlements of contracts are to be made under the rules of the Exchange until another revision is made. During the three and a half hours' conference a crowd of brokers packed the anteroom waiting eagerly for the words to come from the committee room that would fix the basis of prices for cotton for at least three months to come. When the door finally opened and the committee marched out the waiting brokers made a mad rush for the figures and then dashed for the telephones, telegraph and cable offices to notify the cotton trade at home and abroad. The previous revision was made on Feb. 5, 1913, the committee having decided in September to continue the

February differences in force. The next revision can be made in February, 1914. On Nov. 20 the committee increased both premiums and discounts, the following table showing (in cents) the new differences, compared with the old:

Fair	1.75 on	1.50 on
Strict middling fair	1.50 on	1.30 on
Middling fair	1.30 on	1.10 on
Strict good middling	.90 on	.68 on
Fully good middling	.78 on	.57 on
Good middling	.65 on	.46 on
Barely good middling	.48 on	.35 on
Strict middling	.32 on	.24 on
Full middling	.16 on	.12 on
Middling	——Basis——	
Barely middling	.25 off	.17 off
Strict low middling	.50 off	.35 off
Fully low middling	.85 off	.55 off
Low middling	1.25 off	.80 off
Strict good ordinary	2.00 off	1.40 off
Good ordinary	3.00 off	2.15 off
Strict good middling tinged	.45 on	.35 on
Good middling tinged	—Value of mid.—	
Strict middling tinged	.20 off	.15 off
Middling tinged	.40 off	.30 off
Strict low middling tinged	1.25 off	.85 off
Low middling tinged	3.00 off	2.00 off
Middling stained	1.25 off	.90 off

The following members of the committee were present at the November revision, two members, Edward H. Inman, of Atlanta, Ga., and Hugh M. Neely, Jr., of Memphis, Tenn., being absent: Henry Hentz, W. H. Hubbard, Edward P. Walker, Wm. Ray, M. P. Parrott, Luitpold Mandelbaum, Samuel Hopkins, J. Temple Gwathmey, Jr., P. S. Coate, Charles N. Brush of Boston, Moses C. Heath of Columbia, S. C., Frank H. Barrett of Augusta, Ga., A. Carl Espy of Savannah, Ga., and James E. Latham of Greensboro, N. C.

This revision of differences by the New York Cotton Exchange, coming at a time when a committee of the Exchange is considering plans for reforming its methods in order to meet the threatened legislation at Washington, serves to direct increased attention to the question of regulating cotton exchanges by law. In 1908 the Commissioner of Corporations, Herbert Knox Smith made a report on cotton exchanges after a careful investigation of the subject. He paid special attention to the question of "differences," the following being extracts from his conclusions. Since that report was issued the New York Exchange has adopted the practice of revising the differences in February, September and November:

The rules of the New York Cotton Exchange provide no standard by which the revision committee shall act in fixing differences. On account of the narrowness of the New York spot market, the committee cannot revise differences purely on the basis of local transactions. It is not, however, compelled by any rule to fix them in accordance with the commercial differences prevailing at the time in the leading spot markets. The revision committee is, of course, supposed to take account of these commercial differences, but it is bound by no rules whatever.

It is obvious that the differences established by the New York revision committee may, and indeed at times must, be out of line with the actual relative values of the several grades of cotton in spot markets.

These disparities between the differences established by the New York revision committee and the actual commercial differences are bound to result in injury to certain classes of dealers in future contracts.

It is clearly incumbent upon the New York Cotton Exchange to readopt the commercial-difference principle, at least in its broad outlines. Whether the commercial-difference system in its entirety, as employed in New Orleans, should be adopted by the New York Cotton Exchange, or whether some modification of that syystem should be permitted is, however, an open question. A rigid application of the commercial-difference system would demand that contract difference be changed whenever a change occurred in commercial differences, and, moreover, that they be based upon spot quotations in the delivery market itself. Owing to the narrowness of the New York spot market, it is impracticable thus to use the New York quotations as a basis for establishing contract differences; consequently, New York must base its revisions in the main on the differences prevailing in leading southern markets.

The effect of a difference system upon the business of the New York market alone is not a proper basis for framing the rules of an exchange. The first consideration is that these rules shall be equitable and commercial. If the New York Cotton Exchange cannot exist under such rules, then it has no right to exist at all.

A few weeks ago the Mandelbaum Committee of the New York Cotton Exchange made a report in which the following changes in the rules of the exchange are proposed:

The adoption of the government standard grades, adding one lower grade.

Monthly revision of grade differences in spot cotton quotations, instead of three revisions a year.

Prohibition of the giving of credit for speculative purposes.

Elimination of good ordinary, low middling tinged, strict middling fair and fair cotton, in harmony with the Government standards.

Reduction in tare from 28 to 25 pounds per bale.

The members of the Exchange have these changes under consideration as this issue appears. It is not likely, however, that their adoption will stop the agitation in Congress to secure legislation regulating the cotton exchanges of the country.

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The Census of Cotton Manufactures

Five years ago the government took a census throughout the United States and last month, nearly five years after the event, the textile trade was reminded of it by the unexpected appearance of the census bulletin relating to cotton manufactures. The age of the statistics is shown by the date, 1909, while the changes during that period are indicated by the total number of spindles, 27,425,608, for that year, and the number, 31,505,000, which the Census Bureau reported to the International Cotton Federation on Aug. 31, 1913. Although the spindles have increased 4,109,200, or 13 per cent., the 1909 figures have a value that even now is not entirely historical.

The census is summarized as follows:

	1909	1904
Establishments	1,324	1,154
Employes, wage and salaried	387,771	323,287
Horse power	1,296,517	986,604
Capital	$822,238,000	$613,111,000
Salaries	14,412,000	10,238,000
Wages	132,859,000	96,206,000
Materials, fuel and power	371,009,000	286,255,000
Products	628,392,000	450,468,000

The total cost as reported for 1909 is apportioned as follows:

Salaries	$14,411,758	2.6%
Wages	132,859,145	24.4
Fuel and power	13,985,896	2.6
Materials	357,023,574	65.4
Miscellaneous	27,587,754	5.0
	$545,868,127	100%

The size of the establishments in the cotton industry are indicated by the following classification:

Products per estab.	1909 No.	1909 %	1904 No.	1904 %
$1,000,000 and over	163	12.3	99	8.6
$100,000 to $1,000,000	798	60.3	709	61.4
$20,000 to $100,000	280	21.1	273	23.7
$5,000 to $20,000	66	5.0	47	4.1
Less than $5,000	17	1.3	26	2.3
	1,324	100	1,154	100

The character of the products in 1909 is thus stated:

Plain cloth for converting	$111,123,604
Sheetings and shirtings	88,890,888
Fancy	47,650,030
Duck	27,590,089
Cottonades	3,411,736
Upholstery goods	16,095,827
Towels and toweling	6,066,449
Tapes and webbing	5,559,099
Thread	20,650,616
Yarn for sale	109,400,376
All other	186,488,329
	$622,927,043

The operatives in 1909 are thus classified according to ages and occupation:

	16 years and over	Under 16 years
Spinners	50,499	16,879
Weavers	99,107	3,306
Other	197,871	20,036
Total	347,477	40,221

The prevailing hours of labor per week and number of operatives are given in the following table:

48 hours and under	304
Between 48 and 54	2,879
54 hours	571
Between 54 and 60	190,998
60 hours	119,226
Between 60 and 72	64,687
72 hours and over	215
	378,880

The number of spindles and consumption of cotton are given by States as follows:

	Spindles	Bales
Alabama	885,803	241,073
Connecticut	1,241,524	117,189
Georgia	1,749,483	529,726
Maine	1,020,688	160,550
Maryland	133,302	57,358
Massachusetts	9,375,004	1,244,614
Mississippi	153,804	34,202
New Hampshire	1,318,932	285,659
New Jersey	420,784	34,354
New York	778,036	141,003
North Carolina	2,908,383	754,483
Pennsylvania	252,671	50,691
Rhode Island	2,363,689	223,670
South Carolina	3,754,251	694,834
Tennessee	225,638	58,574
Texas	97,628	32,686
Virginia	316,970	78,017
All other States	429,018	94,053
	27,425,608	4,828,736

The ownership of the cotton establishments are thus classified:

Individual	110
Firm	101
Corporation	1,113
	1,324

Dobby and Jacquard

In the administration of the cotton schedule the Treasury Department has run up against the question: What is the difference between a jacquard and a dobby weave? Paragraph 258 of the new cotton schedule is as follows:

Curtains, table covers, and all articles manufactured of cotton chenille, or of which cotton chenille is the component material of chief value, tapestries, and other Jacquard figured upholstery goods, composed wholly or in chief value of cotton or other vegetable fiber; any of the foregoing, in the piece or otherwise, 35 per centum ad valorem; all other Jacquard figured manufactures of cotton or of which cotton is the component material of chief value, 30 per centum ad valorem.

If a cotton cloth is not classed under this paragraph 258 and subject to a duty of 35 or 30 per cent., it comes under paragraph 252 which provides for duties based on the average yarn number and varying from 7 1/2 per cent. to 30 per cent. The definition of the term "jacquard" is, consequently, a matter of much importance. In order to fortify the government against claims for the repayment of duties that may be collected under paragraph 258 the Treasury Department has authorized Appraiser F. A. Higgins of New York to send the following letter of inquiry to textile manufacturers in different parts of the country:

This office is desirous of obtaining your opinion on the subjects embraced in the following questions, and will appreciate an early reply:

1. If it were decided to produce in your mill a figured cotton cloth, how would you proceed to determine whether dobby or jacquard loom could be used—disregarding what you may determine from a mere viewing of the sample?
2. What is the greatest number of shafts ordinarily actuated by a dobby?
3. What is the maximum dobby capacity?
4. Would you consider, from a competitive point of view, that it would be untenable for this office to return for duty as cotton cloth figured (dobby) a figured cotton cloth produced by a jacquard, but capable of being ordinarily woven by a dobby?
5. In your judgment should it be controlling that all figured cotton cloth produced by 24 or less harnesses be returned for duty as dobby figured (cotton cloth figured, according to average count) even if jacquard figured, considering the provision for jacquard figured manufactures of cotton in paragraph 258?

The Philippine Islands imports of cotton goods during 1913 from the United States amounted to $6,827,082, or 59 per cent. of the total, which amounted to $11,583,638.

Standard Regain for Cotton

In our October issue we gave a table showing the actual moisture regain for worsted at Bradford and Boston for each month of the year 1912. The figures were based on the weather bureau's record at each place and on Hartshorne's tables of worsted regain. This month we give the statistics of moisture regain for cotton, based on the same weather observations and regain tables. Hartshorne's tables give no figures for cotton regain at temperatures below 40° F. This has made it necessary to omit the figures for the days on which the thermometer dropped below 40°, which was more frequently the case at Boston than at Bradford:

Highest, Lowest and Average Regain for Cotton at Boston and Bradford for Each Month of 1912.

BOSTON

	Low	High	Av
January	12.6	13.0	12.8
February	8.7	12.8	10.1
March	6.4	13.6	10.1
April	6.0	14.2	10.1
May	4.8	14.2	9.2
June	5.6	12.4	7.6
July	5.7	12.4	8.6
August	7.0	13.1	9.5
September	7.4	12.9	10.1
October	5.8	14.1	9.4
November	7.2	13.1	9.6
December	7.3	13.7	10.7
12 months	4.8	14.2	9.8

BRADFORD

	Low	High	Av.
January	11.2	13.8	12.7
February	9.9	13.8	13.8
March	9.7	13.6	11.8
April	7.4	13.9	11.6
May	7.4	13.6	11.9
June	8.2	13.6	11.3
July	8.1	13.9	11.1
August	8.7	13.9	11.3
September	9.3	13.2	11.4
October	9.2	13.8	11.8
November	9.6	13.1	11.8
December	10.1	13.6	11.7
12 months	7.4	13.9	11.8

The recognized standard for moisture regain in cotton is 8 1/2 per cent. In only two months, April and May, did the actual regain fall below the 8 1/2 per cent. standard at Bradford, while the monthly average at Bradford exhibits great uniformity, the lowest average, 11.1 per cent., being found in June.

The variable weather at Boston, on the other hand, is indicated by the wide fluctuations in the monthly minimum, maximum and average. Ten of the twelve months at Boston show the regain below the 8 1/2 per cent. standard. The maximum record at Boston is fairly uniform, while the average fluctuates widely, dropping below the standard to 7.6 per cent. in June.

The Bradford average for the year, 11.8 per cent., is 2 per cent. above the Boston average of 9.8 per cent. It is generally admitted that a standard regain for conditioning should correspond as closely as possible to the actual regain. On that basis the Boston record for 1912 fails to supply any reason for adopting an American standard below 8 1/2 per cent.

These comparative records of moisture regain for cotton are of special interest at the present time when the Treasury Department is preparing to adopt a system of conditioning cotton yarn and cloth for the administration of the Underwood tariff. The only standard of cotton regain recognized by the cotton trade in this country and abroad is 8 1/2 per cent. The monthly average of actual regain at Boston during the year 1912 rose to 12.8 per cent. in January, and dropped below 8.6 per cent. for only one month, June, when it was 7.6 per cent., the average for the entire year being 9.8 per cent. This record of observations by the U. S. Weather Bureau shows that the established standard of 8 1/2 per cent. should remain unchanged, being much closer to the actual cotton regain in the United States than in England

Notwithstanding these conditions, which can easily be determined, the Treasury officials on the recommendation of the Bureau of Standards have given a quasi-approval to an allowance of 7 per cent. for moisture in cotton cloth. Soon after the signing of the Underwood bill on October 3, M. J. Corbett & Co., custom house brokers and forwarding agents, 24 State St., New York, issued an elaborate set of tables for determining the average yarn number of cotton cloth. These tables were compiled and copyrighted by J. L. Hollings, of the U. S. Appraiser's Department, New York, who, it is stated, was one of the experts employed by the Finance Committee in framing the cotton schedule. The Corbett-Hollings tables, which must have been compiled before the bill was signed, bore this introductory explanation:

> Whenever the weight found is within 4 per cent. of its given equivalent weight in the table, it will be necessary to make further trials of at least four samples, and if the average weight is again found to be within 4 per cent., the sample must be conditioned, i. e., dried to bone dryness and regain added back.

About three weeks after these tables were published, Assistant Secretary of the Treasury Hamlin issued Treasury Decision 33823, which recommended the "straight line" method of calculating the average number in cotton cloth. The Corbett-Hollings tables were annexed to the decision, but with the introductory explanation regarding conditioning changed to the following.

> Whenever the weight found is within 4 per cent. of its given equivalent weight in the table, it will be necessary to make further trials of at least four samples; and if the average weight is again found to be within 4 per cent., the sample must be conditioned, i. e., dried to bone dryness and a regain of 7 per cent. added back.

A decision by the Assistant Secretary of the Treasury is not law, but simply a regulation that is subject to a reversal by the courts. The explanatory note as to conditioning is not incorporated in the decision as signed by the Secretary of the Treasury, but is annexed to it. Last month we exposed the absurdity of the Hollings-Corbett limit of 4 per cent., which under certain conditions would cause the duty on one cloth to be lower than on another, although the average yarn number was higher. The 7 per cent. allowance for cotton regain as given in the Treasury edition of the Corbett-Hollings tables is no less unjustifiable. It would change the tariff from the rate intended. If the Treasury Department can arbitrarily reduce the allowance for moisture from 8 1/2 to 7 per cent., it can also increase the allowance or abolish it altogether, thus changing at will the tariff on cotton cloths. The apparent approval given to the 7 per cent. allowance should be withdrawn and the cotton cloth tariff administered as intended on the basis of the average yarn number indicating the number of 840-yard lengths in one pound with an allowance of 8 1/2 per cent. for moisture.

THE SOUTHERN TEXTILE ASSOCIATION

The semi-annual meeting of the Southern Textile Association was held at Atlanta, Ga., on November 21. President T. B. Wallace introduced Lee Jordan of the Atlanta Chamber of Commerce, who delivered an address of welcome, the response being made by A. D. Lowne, superintendent of the Fulton Bag and Cotton Mills of Atlanta. The president then delivered his formal address, which was followed by the reading of the following papers: Testing Testing, by N. A. Cobb, Washington, D C.; Fuel Engineering, by W. T. Ray, of Spartanburg, S. C.

The session on November 22 was devoted to the business affairs of the association. It was decided to hold the spring meeting at the Isle of Palms. A large attendance was present at the banquet in the evening, at which Joseph H. Bradley of Huntsville, Ala., presided. Among those who made addresses were W. C. Dowd, president of the Textile Publishing Co., Charlotte, N. C.; Col. Sam Wilkes, Atlanta, Ga.; J. A. Greer, Griffin, Ga.; W. P. Hamrick, Columbia, S. C.

THE AMERICAN ASSOCIATION OF WOOLEN AND WORSTED MANUFACTURERS

The seventh annual meeting of this organization was held at Delmonico's on December 2, over one hundred members being present. In his address President Strong called attention to the good work being done by the association in preventing trade abuses. In closing he pointed to the new conditions under which woolen and worsted manufacturers are called upon to do business and the need of cooperation in meeting and overcoming foreign competition.

After the reading of the reports by the secretary and treasurer, the examiners' committee made their report. This proved to be the most intresting feature of the meeting owing to the exposure of the outrageous abuses in the examination of goods and allowance of claims for imperfections. Following is the report in part:

The examiners' committee which, as you of course know, was appointed for the purpose of investigating the system, or lack of system, that prevails in the matter of returns, rejections and unjust claims, has given a lot of time and thought in an effort to work out a plan by which the unjust return of merchandise and excessive claims could be reduced to a minimum. The association has sent to its members several recommendations in order to make them more conversant with what has been going on. We discovered a lot of things, that, while they were not new, were startling when freely admitted by both adjusters and spongers.

In the first place, we found that nearly every adjuster in the market had more business than he could possibly attend to and that mills and commission houses have been allowing claims and taking back goods, that not only have never been examined by adjusters, but have never been seen by them. They get reports duly signed by adjusters, but it is a physical impossibility for the adjuster to examine more than a very small portion of the merchandise claimed upon. For instance, one adjusting concern represents 95 mills and commission houses, and aside from the men who compose the firm they have two young men who are supposed to examine all the goods. Another firm has 55 mills and commission houses, another 63, another 52 and another 32. It is not an exaggeration to state that not more than 10 per cent. of rejected goods or goods on which claims are made are ever looked at or examined by the adjusters. On the other 90 per cent. they simply take the spongers' say-so regarding their condition, either sign or rubber-stamp a slip, and the claim is then passed by the mill or commission house as O. K., without question.

We also found that one adjuster examines for both mills and cloth jobbers. In one instance, where the mill would not allow the jobber's claim, his argument to the jobber was:

"If you had hired me as your examiner, I could settle all such cases, without even referring them to the commission house, for I am both judge and jury."

This and innumerable similar experiences, with which it is unnecessary to take up your time, lead your committee to the conclusion that the prevailing system of examination throughout the piece goods market is a farce and will continue to be so while manufacturers allow claims in the present lax way and employ adjusters who have more business than they can take care of.

As our investigations progressed we discovered that there were certain improvements in the prevailing methods that could be effected immediately, and with this in mind, a communication was addressed to all members, embracing recommendations that could be put into immediate effect. For your information we repeat these recommendations here:

RECOMMENDATIONS

No. 1. All pieces to be marked at head end with stencil or punch, and on board end with piece number stenciled or stitched on cloth.

No. 2. All piece goods tickets to be stamped with date of invoice.

No. 3. All goods sold as a job to be stamped as follows:

"It is understood that these goods, being sold off-price, are not subject to return or claims of any description, except for short measurement. Goods to be merchantable all or none."

This stamp should be placed on the copy of order, bill and each piece goods ticket.

No. 4. All sponging houses, whether belonging to the Spongers' Association or independent, to be requested to furnish selling agents or commission houses, either weekly or semi-monthly, with a list of all goods remaining in their possession which have been in dispute, whether signed for return or not.

No. 5. No adjuster to be employed by a mill or commission house who also represents a jobber.

No. 6. Allowances for apparent imperfections should be made on the piece goods tickets as at present, but pieces be not strung.

A resolution was adopted admitting top manufacturers and yarn spinners to active membership. The same resolution provided that sellers of yarn and tops should be admitted to associate membership. The president of the association was authorized to appoint a representative to act with other associations for the purpose of suppressing and prosecuting bribery and improper trade practices in the sale of mill supplies.

President Strong of the association was toastmaster at the banquet. The banqueters were entertained by John Kendrick Bangs who spoke on "Salubrities I Have Met."

THE HOME MARKET CLUB

The annual meeting of the Home Market Club, held last month, resulted in the election of the following officers:

President, W. B. H. Dowse of Boston.

Vice-presidents—John Hopewell, Newton; Lyman B. Goff, Pawtucket, R. I.; Joseph Metcalf, Holyoke; Wm. M. Wood, Boston; George M. Whitin, Whitinsville; F. A. Sayles, Saylesville, R. I.; Arthur H. Lowe, Fitchburg; George A. Hammond, Putnam, Conn.; Edward H. Haskell, Boston; J. J. Dewey, Quechee, Vt.; P. F. Amidon, Wilton, N. H.; Frederic C. Fletcher, Boston; L. D. Cole, Newburyport; Arthur B. Daniels, Adams; James E. Osborn, Fall River; George Park, Dexter, Me.; F. W. Estabrook, Manchester, N. H.; Charles H. Pearson, Brookline; Lew C. Hill, Boston; Calvin D. Paige, Southbridge; Chester W. Lyman, New York; Charles T. Paye, North Attleboro; Albert A. Jenks, Pawtucket, R. I.; E. J. Seward, Worcester, Mass.

Executive Committee—The president, secretary and treasurer by virtue of their offices, and Franklin W. Hobbs, Boston; R. P. Snelling, Newton Upper Falls; A. G. Pollard, Lowell; Richard S. Russell, North Andover; William M. Butler, New Bedford.

Advisory Board—The ex-presidents: Wm. H. Bent, Taunton; William B. Plunkett, Adams; George A. Draper, Hopedale; Charles H. Hutchins, Worcester; James R. MacColl, Providence.

Directors, term expiring 1916—W. K. Dana, Westbrook, Me.; Charles Sisson, Providence, R. I.; Eben D. Bancroft, Hopedale; W. F. Shove, Fall River; Lewis R. Speare, Boston; C. T. Plunkett, Adams; Andrew G. Pierce, Jr., New Bedford; C. B. Smith, Fitchburg.

THE AMERICAN COTTON MANUFACTURERS' ASSOCIATION

The meeting of this organization will be held in New York on May 26 and 27, 1914, the invitation of the Merchants' Association of New York to hold the meeting in that city having been accepted. This is the first time that the American Association has held a meeting as far North as New York. With the exception of the meetings held at Washington, the May convention will be the first one to be held north of the Mason and Dixie line, and it is expected that a large number of manufacturers from both sections of the country will be present.

THE ARTIFICIAL RIPENING OF COTTON

Many advantages are claimed for a process of ripening cotton by artificial means which is controlled by the Hall Cotton Reclaiming Co. At present only the ripe bolls of cotton are picked and as the cotton matures at different periods it is necessary for the picker to make a selection. This causes loss of time and much waste of cotton. By the Hall process all the bolls are gathered at a comparatively early stage in their development and the maturing process is then carried on artificially so that the entire crop is matured at the same time. By this means it is claimed the yield is increased and the cost of production decreased. Test of two bolls, one matured naturally and the other artificially by means of the Hall process were made by L. DeCosta Ward of the Philadelphia Textile School. They showed practically the same length of staple in both cases with the artificially matured fibers possessing greater strength. The seed from the cotton bolls was tested by W. J. Williams, government chemist at the United States Arsenal, Frankford, Pa., who reports that the oil and fat in the naturally ripened seeds amounted to 32.32 per cent., and in the artificially reopened seeds 34.64 per cent. T. S. Cave of Barnwell, S. C., has carefully investigated the process and placed an order for a maturing apparatus. Mr. Cave writes us as follows in regard to the matter:

I have seen the Hall maturing machine in operation, maturing and opening green cotton bolls in two hours that would not have opened naturally in the fields in ten days and I believe that in time not far distant the entire cotton crop will be opened by the Hall process. I carried with me last week to Philadelphia a lot of immature frost-bitten bolls that would never have opened in the fields, placed them in the Hall machine at the Commercial Museum and saw them opened in two hours. I regard the Hall process as one of the greatest inventions of the age.

THE SOUTHERN NEW ENGLAND TEXTILE CLUB

A meeting of this club was held at the Narragansett Hotel, Providence, R. I., on November 20. The feature of the occasion was an address by Gov. Pothier of Rhode Island, who devoted special attention to the business situation and the necessity for protection against the competition of foreign mills producing goods with the operatives working at wages far below the American level. After the Governor concluded his address many of those present accepted the invitation of Walter T. Phipps, secretary of the American Silk Spinning Co., of Providence, to a dinner at the Turks' Head Club.

A COTTON PICKER'S HELPER

By ALBERT HENDERSON, Albany, Ga.

This machine consists of a vehicle on three wheels with one wheel in advance of the other two and supporting a separate frame attached to the main frame by a swivel joint. The other two wheels are fastened to an axle which carries a loose wheel having a pawl that engages the teeth of a ratchet wheel when the loose wheel is revolved in the forward direction. The ratchet is fastened to the axle. The wheel is revolved by the means of a chain which has one end secured to the wheel and wrapped one time around the wheel and the other end secured to a lever. A lighter chain is wound in the opposite direction around the small hub of the wheel, one end being attached to the hub and the other to a spring which acts in opposition to the force of the lever. The movement of the wheel is reversed by the backward and forward movement of the lever and spring.

The vehicle is driven forward by pulling the lever that unwinds the chain and causes the pawl to engage the teeth of the ratchet, which drives the axle and the two hind wheels forward. There is also a second lever that is hinged near the back of the frame and passes along the side to the front where it is convenient for the operator to place his foot upon it and press down. This action draws the main lever forward a short distance by means of a light chain that links the two levers together. This lever is used when the operator desires to move a very short distance in very thick open cotton. It carries the machine only six inches, the main lever carrying it four feet. The main lever is used in cotton that is irregular. The foot lever will be used most, as in picking cotton the operator does not want to move more than six inches, in which case he will have the use of his hands at all times. Above the vehicle is a wire frame something on the order of an umbrella frame, which can be any desired shape, round, square or otherwise. The frame is covered by a suitable cloth and can be adjusted to keep the operator in the shade. People who have never picked cotton in the sun in Georgia and Mississippi do not know what hot weather is. A revolving seat is placed on the front end of the frame so that a person seated there can easily change from right to front or left face instantly and with but little exertion. He sits in a position to part the limbs of the cotton stalks so that he can move the vehicle easily and without injuring the stalks in any way. The seat is so low that a child can reach any cotton that may have fallen to the ground. If the picker gets tired of sitting he can stand and pick without any difficulty. A large bag is carried on the rear of the machine. This bag is held open by a steel wire frame and is always to the right or left, which ever way the operator is facing or at his back when he is facing the front. This bag will carry about 250 or 300 pounds of cotton and can be supplied by a new bag if the load becomes too heavy, which may happen twice a day. I believe that I have perfected the best kind of a device to help gather the cotton. I do not believe there will ever be a machine made that will take the cotton from the boll. The human hand is the only thing that will ever be successful in picking cotton.

The Textile World Record's Report of Mill Construction for 1913

So far as the total number of new textile mills is concerned the record of mill construction in the U. S. has been fairly uniform for two years, the number being 265 for 1912 and 277 for 1913. The number for 1913 is also in close correspondence with

NEW COTTON MILLS.

New England States	No.	Spindles		Looms	
Maine	1	75,000		2,000	
Massachusetts	3	....		6	
New Hampshire	1	....		50	
Rhode Island	2	....		....	
	— 7		75,000		— 2,056
Southern States					
Alabama	3	45,000		1,200	
Georgia	1	20,160		700	
North Carolina	8	90,600		1,280	
South Carolina	1	20,000		500	
Virginia	1	75,000		2,200	
	— 14		250,760		— 5,880
Middle States					
Arkansas	1	7,000		104	
Pennsylvania	5	....		72	
	— 6		1,700		— 176
	27		327,460		8,112

the average (269) for the preceding ten years This indicates a healthy confidence in the future on the part of textile manufacturers. The number of cotton mills shows a decrease from 1912; the knitting and silk

COMPARISON OF NEW MILL CONSTRUCTION FOR LAST TEN YEARS.

	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904
Cotton	27	37	32	67	80	47	64	74	33	48
Wool	24	24	20	31	47	23	25	56	38	45
Knitting	142	122	92	113	105	94	88	103	79	111
Silk	54	46	38	34	37	33	51	36	53	49
Miscellaneous	30	36	26	29	20	25	39	34	42	37
	277	265	208	274	289	222	262	303	245	290

mills an increase, while the number of new woolen and worsted mills is the same as last year.

In the cotton industry the extensions and improvements made by old established mills, many of these enlargements more extensive than good-sized new mills, shows that the tendency has been towards strengthening existing organizations rather than toward launching new enterprises. New England's comparatively modest showing being due to the fact that in this section the goods are finer than in other parts of the country, and consequently a lowering of the petition with foreign mills. The location of new cotton mills in 1913 means a wider distribution of the industry, a tendency that should be encouraged in order to check the

NEW KNITTING MILLS.

New England	No.	1913	1912	1911	1910	1909	1908	1907	1906
Connecticut	2								
Massachusetts	4								
New Hampshire	1								
	—	7							
Middle States									
Maryland	1								
New Jersey	8								
New York	18								
Pennsylvania	59								
	—	86							
Western States									
California	4								
Illinois	3								
Indiana	3								
Michigan	3								
Ohio	3								
Oklahoma	1								
Oregon	1								
Utah	2								
Wisconsin	4								
	—	25							
Southern States									
North Carolina	17								
South Carolina	1								
Tennessee	6								
	—	24							
		142	112	113	104	92	83	103	79

evils of industrial concentration. The twenty-four woolen and worsted mills are small plants and fairly well distributed. Eight of the twenty-four woolen and worsted mills are equipped with carding, combing or spinning machinery, the others being weaving mills or for the manufacture of felts, wadding and other wool goods.

Sixty per cent. of the new knitting mills are located in three States, Pennsylvania. New York and New Jersey. The Southern States have twenty-four of the mills, a decided increase as compared with 1912, when only five new mills were reported from that section. The number of new knitting mills

COMPARISON OF SPINDLES IN NEW COTTON MILLS FOR THE LAST ELEVEN YEARS.

	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903
New England	75,000	94,400	170,500	468,714	529,030	115,000	113,000	171,000	100,800	161,184	135,000
Southern States	250,760	437,000	172,000	214,028	527,528	91,193	294,745	294,956	97,290	55,472	281,752
Middle and Western	7,000	1,700	4,920	12,500	79,968	3,500	10,250	27,040	.....	.....	.....
Totals	332,760	533,100	347,420	695,242	1,206,496	209,693	417,995	492,996	198,730	216,656	416,752

is the largest on record and is due in a large measure to the substitution of knitted articles of outer apparel for the products of clothing manufacturers, as pointed out in an

NEW SILK MILLS.

	No.	1913	1912	1911	1910	1909	1908	1907
Connecticut								
Broad Silks	1							
Braids	1							
	—	2						
Illinois								
Neckwear	1							
	—	1						
Massachusetts								
Braids	1							
	—	1						
New Hampshire								
Ribbon								
	—	1						
New Jersey								
Broad Silks	10							
Throwing	6							
Ribbons	5							
	—	21						
New York								
Broad	2							
Trimmings	5							
	—	7						
Pennsylvania								
Broad	5							
Ribbon	7							
Throwing	5							
Raw	3							
	—	20						
Rhode Island								
Broad Silks	2							
	—	2						
Virffinia								
Broad Silk	2							
	—	2						
West Virginia								
Throwing	1							
	—	1						
Total		54	47	38	34	37	32	51

editorial on knitting mill expansion, published in September.

The tendency to concentrate is still strong in the silk industry, 41 mills, nearly four-fifths of the total, being located in New

NEW WOOLEN AND WORSTED MILLS.

New England	No.	1913	1912	1911	1910	1909	1908	1907	1906
Connecticut	1								
Maine	1								
Massachusetts	4								
Rhode Island	1								
vermont	1								
	—	8							
Middle States									
New York	2								
Pennsylvania	11								
Indiana	1								
	—	14							
Western States									
California	1								
Wisconsin	1								
	—	2							
		24	23	17	31	47	22	25	56

Jersey and Pennsylvania. A larger number than usual of these new mills, however, are in cities and towns removed from the most congested centers and the silk manufacturing trade givse evidence of a desire to branch out into neighboring states, as indicated by the reports of new mills in Virginia and West Virginia.

The record of enlargements and improvements supplies gratifying proof of the healthy condition of the industry. Manufacturers have strengthened their plants by extensions and renewals in preparation for the business which they believe will have to be done in order to supply the demand for textile products of all kinds.

BUSINESS CONDITIONS IN EUROPE

From an Occasional Correspondent

Basel, Switzerland, Nov. 25, 1913.

Editor Textile World Record:

Replying to your recent inquiry I find that nearly all the goods known as "duvetyn" are manufactured and finished in France where there is a monopoly of this style of finish.

You may be interested in knowing that from 70,000 to 80,000 looms in South Germany and Alsace will be shut down every Monday during the first quarter of 1914. This will compel the spinners to curtail production in a short time. There is an over production throughout Europe and the curtailment decided upon is the only possible course in the face of the ruinous prices in the weaving trade.

THE BOSTON WOOL TRADE ASSOCIATION

This organization recently held its annual meeting and elected the following officers:

President, Jacob F. Brown, of Brown & Adams; vice-president, Arthur E. Gill, of Dewey, Gould & Co.; secretary and treasurer, George W. Benedict. Executive committee—Jacob F. Brown, Arthur E. Gill, Ludwig Eisemann, of Eisemann Bros.; Albert W. Elliott, of Jeremiah Williams & Co.; William E. Jones, of Hallowell, Jones & Donald; A. Koshland, of J. Koshland & Co.; Charles J. Nichols, of Hills & Nichols. Arbitration committee—Louis Baer, of Eisemann Bros., chairman; Charles F. Avery, of Mauger & Avery; Lewis Balch, of J. H. Wheelock & Co.; Matthew Luce, of Luce & Manning; Walter P. Wright, of Wright Bros.

Of the total output of ginghams during 1909, Massachusetts produced 26 per cent. and North Carolina 20.8 per cent., as compared with 19.4 and 28.6 per cent. respectively in 1899.

New Mill Construction for 1913

(A summary will be found in the Monthly Comment of this issue.)

EXPLANATION OF ABBREVIATIONS: S=steam power; W=water power; E=electric power; D=dye house.

NEW COTTON MILLS.

ALABAMA.

Ozark. Ozark Cotton Mill Co.; $100,000; J. D. Holman, pres.; H. O. Dowling, treas.; W. D. McNeill, mgr. and buyer; 16s to 30s Hosiery Yarns. (Building brick mill, 100 by 300 ft., and steam power house, 40 by 70 ft. Start mfg. about June, 1914.) ..... 5,000 ..

Ragland. Alabama Textile Co.; building weaving mill; organization of company not completed; J. Riddell in charge. ....

Sylacauga. Eva Jane Mills; White and Colored Cotton Goods; built by Avondale Mills, Birmingham. (Four-story mill, 445 by 140 ft.) 40,000 1,200

ARKANSAS.

Helena. St. Francis Cotton Mills; new mill to make Osnaburgs and Sheetings; electric. (Taken over spinning machinery of Premier Cotton Mills and added looms.) 7,000 104

GEORGIA.

Chickamauga. Crystal Springs Bleachery Co.; D. A. Jewell, pres., treas. and buyer; A. E. Yates, supt.; Bag Goods; electric; sell direct. (Three-story brick mill, 375 by 131 ft., under construction; begin manufacturing Jan. 1.) 20,160 700

MAINE.

Lewiston. Bates Mfg. Co.; built new weave shed covering 4 1/2 acres, to give increase of 75,000 spindles and 2,000 looms. 75,000 2,000

MASSACHUSETTS.

Boston. Alpha Waste Products Co.; 1586 Hyde Park Ave., Hyde Park; $50,000; George S. Wood, pres. and buyer; Chas. E. Peakes, treas.; Edw. Heaton, supt.; Cleansing and Processing of Oily Cotton Waste; steam; sell direct; office, 620 Atlantic Ave., Boston. ....

Boston. Noone, C. H., Co.; 121 Lamartine St., Jamaica Plain; "Flatworksheet," 7 1/2 oz. Cotton Laundry Duck, 105, 115 and 125 in. wide. 6

Framingham. Standard Woven Fabric Co.; built new 3-story cement mill with greatly increased capacity; removed plant from Worcester. ....

NEW HAMPSHIRE.

Keene. Keene Artistic Narrow Web Co.; Laces, Belts and Narrow Fabrics. (Branch of N. H. Artistic Web Co., Barnstead, N. H.) 50

NORTH CAROLINA.

Charlotte. Thrift Mfg. Co.; $600,000; E. A. Smith, pres.; Geo. B. Hiss, treas.; J. W. Kidd, supt.; Brown Sheetings; electric; Wilson & Bradbury, Phila. and N. Y., s. agts. (Succeeded Thayer Mfg. Co. and completed new plant.) 22,000 580

Concord. Roberta Mill; constructed new mill on old site; P. M. Keller and John C. Rankin; Hosiery and Hard Yarns, 14s to 26s. ..... 2,000 ..

Greenville. Greenville Cotton Mills, Inc.; $100,000; J. G. Moye, pres.; E. B. Higgs, vice-pres. and treas.; W. H. Norris, mgr. and buyer; 8 to 18 Cotton Yarns; steam. (Will build mill.) ..... 5,000 ..

High Point. Highland Cotton Mills, Inc.; $250,000; J. H. Adams, pres and buyer; J. E. Millis, treas.; L. R. Gilbert, supt.; 10s to 20s Hosiery Yarns; electric. (Built reinforced concrete mill, 390 by 125 ft.) ..... 12,000 ..

Kannapolis. Cabarrus Cotton Mills. Branch of Concord. (Under construction Nov., 1913.) ..... 20,000 ..

Landis. Corriher Mills Co.; $47,500; C. J. Deal, pres.; L. A. Corriher, treas.; G. O. Lipe, supt.; 24s Hosiery Yarns; treas. and supt., buyers. (Begin mfg. Jan. 1.) ..... 4,000 ..

Lexington. Erlanger Cotton Mills; $500,000; Cotton Cloth for B. V. D. Underwear; steam and electric. (Under construction Nov., 1913.) 25,600 680

Salisbury. Littmann Mills, Inc.; $50,000 (authorized); I. Littmann, pres., treas. and buyer; L. A. Henley, supt.; Mosquito Netting; dye (piece); steam; buy 1/30, 1/40 cones and warps. 30

PENNSYLVANIA.

Philadelphia. Carlisle Mills; Arthur Boeschenstein, prop.; 243 E. Ontario St.; Turkish Towels, Wash Cloths, etc.; buy 10, 12, 14/1, 20/2. 9

Philadelphia. Cheltenham Towel Mills; Mascher and York Sts.; High Grade Turkish Towels; F. Tausend Com. Co., s. agts. .. 28

Philadelphia. Royle & Craven; Oxford and Josephine Sts., Frankford; Cotton Quilts... .. ..

Philadelphia. Sherwood, A. G., Upholstery Co.; A. G. Sherwood, prop.; 1516 Callowhill St.; Upholstery Trimmings; sell direct. 27

Philadelphia. Standard Bed Spread Mills; Max Davidson, prop.; Jasper and Orleans Sts.; Cotton Bed Spreads. 8

RHODE ISLAND.

Hopkinton. Yawgo Line & Twine Co.; $25,000; Geo. B. Langworthy, pres.; Fred'k Hill, treas.; Osmas Edwards, mgr. and buyer; Yarns, Twine and Cordage; dye, steam and water; sell direct. ....

Pawtucket. Rhode Island Textile Co.; $10,000; A. L. Kelley, Jr., pres.; Geo. F. Kelley, treas.; John H. Conrad, mgr. and buyer; Braids; 300 braiders. ....

SOUTH CAROLINA.

Union. Monarch Cotton Mills; built new 4-story mill, 380 by 125 ft., equipped with electric drive. 20,000 500

VIRGINIA.

Danville. Riverside & Dan River Cotton Mills; completing installation of equipment in new spinning mill and weave shed, including large number of electric motors for power distribution. 75,000 2,200

CANADA.

Ontario, Galt. Narrow Fabric Weaving & Dyeing, Ltd.; $40,000; Geo. Hancock, pres.; E. Wilkinson, treas.; P. F. Fitch, supt.; Cotton and Silk Labels, Shoe Straps, etc.; dye and finish; steam and electric; buy cotton and silk yarns. 10

Quebec, Montreal. International Braid Co. of Canada, Ltd.; 373 Aqueduct St.; R. B. Hamilton, agt.; Boot, Shoe and Corset Laces. (Branch of East Braintree, Mass.) .. ..

Quebec, Sherbrooke. Canadian Connecticut Cotton Mills, Ltd.; $1,750,000; H. L. Burrage, pres.; Tracy S. Lewis, treas. and buyer; Obadiah Butler, mgr.; Special Cotton Fabrics. (Building main mill, 250 by 112 ft., two and three stories, storehouse 100 by 100 ft. and power house 50 by 40 ft.) ....

NEW WOOLEN MILLS.

No. Sets Cards | Looms

CALIFORNIA.

Long Beach. California Woolen Mfg. Co.; $200,000; S. J. Kent, pres.; R. Z. McCourt, treas.; J. F. McAfee, supt. and buyer; Flannels, Blankets and Cassimeres; dye and finish; electric. (Equipment of Topeka Woolen Mfg. Co., Topeka, Kan.) ..... 3 | 11

CONNECTICUT.

Elmville. Nicholas & Nicholas; Geo. K. Nicholas, treas., mgr. and buyer; Men's and Women's Worsted Goods; sell direct; buy 2/20 to 2/40 worsted yarns. ..... | 2

INDIANA.

Mexico. Mexico Woolen Mills; $25,000; C. H. Black, pres.; Geo. Willson, treas.; Knitting Yarns, Bed and Horse Blankets and Auto Robes; 1,200 spindles; dye (raw stock); water... 3 | 6

MAINE.

Pittsfield. McGilvery-Cummings Co.; $20,000; Danl. E. Cummings, pres.; William McGilvery, treas. and agt.; All Wool Shoddies; dye; electric; sell direct. ..... | ..

MASSACHUSETTS.

Boston. Middlebrook Wool Combing Co., Inc.; 310 Border St., East Boston; $250,000; J. A. Middlebrook, pres.; J. W. Coggeshall, treas.; Commission Wool Combing; 20 combs. .....24 | ..

Lawrence. Lord, Ernest & Son; Broadway and Cross St.; Worsteds. ..... | ..

South Framingham. Emmons, A. W., Co.; 37 Wellington Ave.; $125,000; A. W. Emmons, pres.; Geo. L. Hanna, treas. and buyer; Harry Haigh, supt.; Ladies' Wool Felt Hats and Bodies; steam and electric; dye (piece); sell direct. .... 2 | ..

Westboro. Bay State Felt Co.; $250,000; Jonathan Whitaker, pres.; Benj. Kenrick, treas.; Albert Crabtree, supt.; Hat Felts. ..... | ..

NEW YORK.

Auburn. Firth Carpet Co.; Seamless Scotch, Chenille and Axminster Rugs; electric. (Branch of Firthcliffe.) ..... | ..

Waterford. Waterford Woolen Co., Inc.; 35 Ballston St.; $20,000; O. A. Saeltzer, pres. and buyer; H. B. Brooks, treas.; Wool Shoddy; 3 pickers; dye and carbonize; steam and electric. (Burned Oct., 1913. To be rebuilt.) ..... 5 | ..

PENNSYLVANIA.

Philadelphia. Galashan, John; Mascher and Turner Sts.; Custom Weaving. ..... | ..

Philadelphia. Harkel Co.; Orthodox and Hor-..rocks Sts..., Frankford; Woolen and Worsted Fabrics. ..... | ..

Philadelphia. Jeeson Mfg. Co.; 2nd St. and Columbia Ave.; Wool, Worsted and Cotton Dress Goods and Men's Wear. ..... | 8

Philadelphia. Klenk-Landis Co.; $10,000; James Klenk, pres.; Lewis Klenk, treas.; Wm. S. Landis, mgr.; Woolen and Merino Yarns, 8 to 40 cut; 2,300 mule spindles; sell direct. ..... 3 | ..

Philadelphia. Myers-Jolesch Co.; Howard St. and Montgomery Ave.; Woolen and Worsted Cloakings; N. Y. office, 334 Fourth Ave. ..... | 16

Philadelphia. Rooba Mfg. Co.; 1543 Ruan St.; Chas. Mayrus, mgr.; Dress Goods and Men's Wear Worsteds on Commission; steam; sell direct. ..... | 10

Philadelphia. Saxonia Dress Goods Mills; built new plant at Westmoreland and C Sts., consisting of 4-story factory building, 180 by 58 ft., warehouse, 152 by 162 ft., and power house for steam and electric drive, 40 by 64 ft.

Philadelphia. Sykes-Geiger Co.; Frankford Ave. and Van Dyke St., Frankford; $30,000; Woolen Carpet Yarns. ..... | ..

Chester. Nelson Spinning Co.; 11th and Walnut Sts.; $10,000; W. G. Nelson, pres.; S. L. Irving, treas.; Wool and Merino Yarns, 2/5 to 2/25; 2,160 spindles. ..... 4 | ..

Erie. Puritan Woolen Mills Co.; 228 West 12th St.; $10,000; F. H. Paul, pres. and buyer; D. H. Hill, treas.; Wool Batts and Wool Filled Comforts; electric; sell direct. ..... 1 | ..

Parkers Landing. Parker Woolen Mills; $10,000; Lester Fleming, pres.; Arthur E. Conn, treas.; J. O. Conn, supt.; Woolen and Merino Yarns, 6 to 26 cut, gas; sell direct; treas. and supt., buyers. ..... 1 | ..

RHODE ISLAND.

Warren. Warren Worsted Mill; $150,000; Walter A. Guile, pres. and gen. mgr.; Clarence A. Brouwer, treas.; Fine Worsteds; electric. (Brick mill, 60 by 300 ft., under construction.).... | 60

VERMONT.

North Montpelier. Little Woolen Co.; $10,000; succeeded Little Mfg. Co.; built new mill, 150 by 54 ft., two stories high, to replace plant burned. ..... | ..

WISCONSIN.

Frederic. Frederic Woolen Mill; Flannels, Blankets, Mackinaws and Yarns. ..... 1 | 4

CANADA.

Ontario, Toronto. Dominion Wool Stock Mills, Ltd.; 203 First Ave.; $40,000; O. E. Woods, pres. and buyer; C. R. Peterkin, Jr., treas.; C. M. Wilson, supt.; Coarse and Fine Shoddy and Felted Jute and Cotton Mattress Stock; dye; electric; sell direct. ..... 3 | ..

NEW KNITTING MILLS.

No. Ktg. Machines

CALIFORNIA.

Los Angeles. Los Angeles Knitting Co.; 3512 San Pedro St.; $25,000; Emil Schultz, mgr.; Richard Gerrisch, supt.; Sweaters, Bathing Suits and Jerseys; 8 sewing machines; Richard Gerisch, buyer. ..... | 14

Los Angeles. Western Knitting Mill; 2614 S. Main St.; A. P. Nollan, supt. and buyer; Men's, Women's and Children's Sweater Coats; 4 sewing machines; sell direct. ..... | 4

San Francisco. Western States Knitting Mills; 2550 San Bruno Ave., H. L. Schneider, pres. and buyer; Sweater Coats and Fancy Knit Goods; 4 sewing machines. ..... | 5

West Berkeley. Gunzel, C.; 2413 Eighth St.; Sweater Coats. ..... | ..

CONNECTICUT.

Hartford. Lion Mills; Jos. S. Heilpern and Norman Gross; 6 Village St.; Men's and Women's Full Fashioned Sweater Coats; 7 sewing machines. ..... | 15

Norwich. Coronet Knitting Co.; C. W. Briggs, prop.; 95 Chestnut St.; Robt. Bodycott, supt.; Medium and High Grade Sweater Coats; electric; sell direct. ..... | 3

ILLINOIS.

Chicago. Marshall Field & Co.; 1248 Marianna St.; Geo. U. Clark, supt.; Men's and Boys' Union Suits; 75 sewing machines; F. L. Drane, buyer; buy 9 to 60 cotton, 40 to 70 worsted, single and ply. ..... | 30

Chicago. Shaker Knitting Mills Co.; Franklin and Huron Sts.; $25,000; D. C. O'Shea, pres. and buyer; J. M. Feldhake, treas.; A. Hezinger, supt.; Sweaters, Toques, Collarettes; 10 sewing machines; sell direct. ..... | 20

Chicago. Vassar Swiss Underwear Co.; building new 4-story concrete mill, to cost about $750,000, giving 6 acres of floor space and to be ready for occupancy soon after the first of the year. ..... | ..

INDIANA.

Evansville. Evansville Hosiery Co.; Olive and Canal Sts.; $10,000; R. E. Losey, mgr.; 84-needle Half Hose; F. Marvin Austin, buyer. ..... | 15

Fort Wayne. Anthony Hosiery Mills; $15,000; Morris Levy, pres.; Abe Levy, treas.; H. M. Kahn, supt.

and buyer; Lisle and Mercerized Ladies' Hosiery; 30 knitting and 2 sewing machines; electric; sell direct. 30

Fort Wayne. B. & B. Knitting Co.; 726 Runion Ave.; $10,000; Geo. H. Butler, pres.; Adam Baus, Jr., treas.; Sweaters and Athletic Goods; electric; sell direct. 4

MARYLAND.

Emmitsburg. Union Mfg. Co.; Hosiery; gasoline. (Branch of Frederick.) 30

MASSACHUSETTS.

Franklin. Brown & Sons Mfg. Co ; $25,000; W. F. Brown, pres.; W. F. Brown, Jr., treas.; Underwear and Hosiery. ....

Gloucester. Ipswich Mills; Vincent St.; E. H. Hills, supt.; Men's Cotton Hosiery; electric. (Branch of Ipswich, where goods are dyed and finished.) 129

Springfield. Higgins, R. G. & Co.; 22 Salem St.; Knitted Silk Neckties. ....

Waltham. Clayton Mfg. Co.; Edwin Clayton, gen. mgr.; Ladies' Union Suits and Two-Piece Underwear; 12 sewing machines; electric; sell direct; buy 18 to 40. 3

MICHIGAN.

Bay City. Amonica Knitting Works; 1116 Garfield Ave.; Wm. Hanson, pres.; Anthony Miller, treas., supt. and buyer; Men's, Women's and Children's Hosiery; dye; electric; sell direct. 10

Grand Rapids. Williams Glove & Gauntlet Co.; 249 Pearl St.; Geo. E. Bennett, supt.; Astrakhan Cloth and Other Knitted Fabrics; 12 sewing machines; dye (piece); steam and electric; Francis H. Holmes, N. Y., s. agt.; Geo. T. Williams, buyer. 8

MINNESOTA.

Litchfield. Litchfield Knitting Mill; P. C. and N. C. Nielsen Co., props.; $10,000; Underwear for Men, Women and Children; 3 sewing machines; electric. 5

Minneapolis. Lake Street Knitting Works; Fred Palmdahl, prop.; 1705 E. Lake St.; Sweater Coats and Stockings; 3 sewing machines; electric; sell direct. 10

St. Paul. Capitol Knitting Co.; Capitol Suspender Co., props.; Sweaters and Sweater Coats; L. D. Horn, buyer. ....

NEW HAMPSHIRE.

Lakeport. Laconia Knitting Co.; Fred M. Swain, pres.; Wm. T. Swain, vice-pres.; Chas. H. Perkins, sec. and treas.; Astrakhan, Stockinette, Jersey and Elderdown Cloth; electric. ....

NEW JERSEY.

Boonton. Boonton Hosiery Co.; $100,000; Geo. E. Fichtner, pres. and treas.; Ladies' Full Fashioned Silk Hosiery; full fashion machines; electric. (Mill under construction.) 24

Medford. Powell Knitting Co.; Seamless Hosiery; Geo. J. Graff, supt.; gas; mill building erected. (Branch of Philadelphia.) ....

Newark. Groblue Knitting Mills; 39 S. Eighth St.; $100,000; T. Groedel, pres.; Harry Groedel, treas.; Jacob Blume, buyer; Sweaters and Bathing Suits; 4 sewing machines; electric; sell direct. 10

Newark. N. J. Textile Art Corp.; 61 Arlington St.; Oswald Schenke, pres.; C. T. Meiner, treas.; F. E. M. Schenke, supt. and buyer; Hosiery; 5 sewing machines; steam; sell direct. 20

Paterson. Atlas Silk Hosiery Co.; East Railway and Kentucky Ave.; $125,000; Max Richter, pres.; Wm. Nebel, vice-pres. and supt.; E. A. Nebel, treas. and buyer; Women's Fine Gauge Full Fashioned Silk Hosiery; H. Richter's Sons, 627 Broadway, N. Y., s. agts.; buy tram silk and merc. ....

Paterson. Simon & King; 166 Ward St.; Knitted Silk Neckties. 4

Union Hill. Atlas Knitting Mills; 124 Main St.; $15,000; I. Rogosin, pres.; J. Epstein, treas., supt. and buyer; Boys' Sweater Coats; 12 sewing machines; sell direct. 8

Vineland. Vineland Glove & Hosiery Mill; Thomas Braithwaite, prop.; Howard Jameson, supt.; Seamless Hosiery and Gloves; steam and gas; buy cotton, merc. and worsted. 28

NEW YORK.

Brooklyn. Ess & Emm Knitting Mills; M. Simon and H. Mallett; 345 Throop Ave.; Shaker Sweaters; electric; sell direct. 5

Brooklyn. Fashion Knitting Works; 206 Manhattan Ave.; Sweater Coats; 5 sewing machines. 10

Brooklyn. Full Fashion Silk Hosiery Co.; 30 Main St.; $200,000; Hosiery and Gloves. ....

Brooklyn. Infant Wear Knitting Corp.; 40 Penn St.; $15,000; H. Parra, pres., treas. and buyer; Wm. Richardson, supt.; Infants' and Children's Knit goods; 5 flat, 1 circular and 1 full fashioned knitting machines; 3 sewing machines; steam; sell direct; buy 10 to 30/2, 40 and 60 single. 7

Cambridge. Superior Mfg. Co.; Finishing Only. (Branch of Hoosick Falls.) ....

Clifton Springs. Clifton Springs Knitting Co.; Crane St.; Chas. M. Tinkham and F. J. Daly; Gloves, Caps and Sweaters; electric. 6

New York City. Art Knitting Mills; 96 Grand St.; $3,000; Ben Bangser, pres.; J. Rosenbloom, treas.; Knitted Neckwear. 8

New York City. Boyd & Co.; 2159 Prospect Ave., Bronx; Full Fashioned Silk Hosiery and Underwear; office, Fifth Ave. Bldg. 50

New York City. Brand, Jos. & Bro.; 521 E. 72nd St.; Astrachan Fabrics; sell direct; buy 1/10, 1/30 cotton, 2/3, 2/10 wool. 6

New York City. N. Y. Crown Knitting Works; 135 Grand St.; Harry Kopolsky, mgr. and buyer; Sweater Coats and Bathing Suits; electric; sell direct. ....

New York City. Pioneer Knitting Mills, Inc.; 3635 Third Ave.; $12,000; Jacob Bandes, pres. and buyer; Louis Bandes, supt.; Men's, Boys' and Ladies' Sweater Coats, Jumbo and Shaker Coats a Specialty; 9 sewing machines; sell direct. 20

New York City. Princely Knitted Neckwear Co.; 433 Broadway; Knitted Neckties; 27 silk spindles; dye; electric; sell direct; Wm. Goldsmith, buyer. 10

New York City. Schwartz Knitting Mills; 141 W. 36th St.; $50,000; Nathan Schwartz, pres., supt. and buyer; Knit Cloth and Sweater Coats; 8 sewing machines; dye; electric; sell direct. 20

New York City. Walker Knitting Mills; Geo. J. Lippmann, prop.; 242 Canal St.; Bathing Suits, Jerseys and Athletic Knit Goods; 6 sewing machines; electric; sell direct. 10

Niagara Falls. Cataract Knitting Co., Inc.; Ontario Ave. and Tenth St.; $5,000; Louis Brown, pres.; Isaac Traub, treas.; Sweaters, Hosiery and Underwear. ....

Oswego. Chonaguen Textile Mills; 3rd, 4th and Lawrence Sts.; $10,000; D. H. Conway,, pres. and agt.; Thos. H. King, treas.; Jas. A. Shufelt, supt.; Children's Knit Goods; 50 sewing machines; dye; electric. 25

Poughkeepsie. Lawrence, W. A., Co., Inc.; $20,000; W. A. Lawrence, pres. and buyer; C. H. Townsend, treas.; C. W. Lawrence, supt.; Knitted Mesh Fabrics, Cotton, Silk and Mercerized; dye; steam and electric; sell direct. 6

Waterford. O'Lena, L. A.; Knitted Novelties. ....

NORTH CAROLINA.

Burlington. Southern Hosiery Mills; $10,000; L. C. Christman, pres. and treas.; C. J. Boland, supt. and buyer; Ladies' Fine Gauge Hosiery; electric; sell direct 60

Chapel Hill. Blanche Hosiery Mills Co.; $15,000; W. S. Robertson, pres.; W. E. Lindsay, treas., mgr. and buyer; J. F. Partin, supt.; Men's, Women's and Children's Hosiery; dye; steam; L. C. Vaughn, s. agt. 75

China Grove. Lillian Knitting Mills Co., No. 2; Seamless Cotton Hosiery; electric; use 12s and 18s carded; branch of Albemarle. (New brick mill, 50 by 130 ft., erected.) 100

Connellys Springs. Mull, D. B.; purchased hosiery knitting dept. and dyeing equipment of Ethel Cotton Mills. (Building new mill.) 60

Durham. North State Knitting Mills; $24,000; J. S. Carr, C. McD. Carr, W. F. Carr and W. J. Berry; Hosiery. ....

Efland. Efland Hosiery Co.; $50,000; M. P. Efland, pres.; John L. Efland, treas.; Hosiery; steam. (Building new mill.) ....

Gibsonville. Gibsonville Hosiery Mill; $100,000; G. W. Fogleman, J. L. Kernodle, W. C. Michael and others. (May take over business of Burlington Hosiery Mill Co.) ....

Hickory. Best Knitting Mills; C. Sherman Grove, prop.; Men's Half Hose; electric; sell direct and through H. H. Sanders N. Y. 24
High Point. Crown Hosiery Mills; $40,000; T. H. Kearns, pres.; G. H. Kearns, treas.; Hosiery; dye and finish; steam. (Built 2-story mill and dye house, 100 by 60 ft. and 60 by 40 ft.) 100
Hildebran. Waldensian Hosiery Mill No. 2; J. A. Cline, gen. mgr. and buyer; Albert Garrou, supt.; Women's Hosiery; electric. (Goods dyed and finished at Valdese.) 60
Mebane. Durham Hosiery Mills No. 6. Seamless Hosiery. (Branch of Durham.) .....
Newton. Ridgeview Hosiery Mills Co.; $21,000; L. F. Long, pres.; J. A. Gaither, treas. and buyer; Women's Seamless Hosiery; electric. 50
Statesville. Walton Hosiery Mills; John Walton, Sr. and John Walton, Jr.; 136-needle Men's Half Hose; 7 ribbers; 7 loopers. 24
Tarboro. Fairview Hosiery Co.; $20,000; George Howard, pres.; C. A. Johnson, treas.; Hosiery. (Equipping plant with capacity of 250 doz. daily.) ..
Thomasville. Sellers' Hosiery Mills; Cotton Half Hose; electric. (Branch of Burlington.) 75
Troy. Troy Knitting Mills Co.; $35,000; J. C. Hurley, pres.; Barna Allen, treas.; Hosiery; electric. (Building 3-story brick mill, 60 by 100 ft., with 1-story dye house, 40 by 60 ft.) .....
Wendell. Wendell Knitting Mills; $20,000; R. B. Whitley, pres.; O. L. Rowland, treas.; J. L. Hallmen, supt.; Cotton Hosiery; 50 latch needle knitting machines; kerosene; buy 14, 17, 40. (Built new brick mill, 96 by 32 ft.) 50

OHIO.

Cleveland. Lion Knitting Mills Co.; 1051 Power Ave.; $25,000; L. H. Einstein, treas. and buyer; Fashioned Sweaters and Sweater Coats; sell direct. .....
Covington. Imperial Underwear Co.; Finishing; 24 sewing machines. (Branch of Piqua.) .....
Greenville. Union Underwear Co.; Men's Union Suits; 50 sewing machines. (Branch of Piqua.) .. 10

OKLAHOMA.

Lawton. Lawton Knitting Mill Co.; H. E. Diehl, Louis Mendlick and J. J. Folk. .....
Oklahoma City. Oklahoma Hosiery Co.; $25,000; T. H. Lindley, pres. and buyer; M. J. Lindley, treas.; J. B. Barker, supt.; Women's Hosiery; 7 sewing machines; dye; electric; sell direct. 100

OREGON.

Portland. Nollan Knitting Co.; 212 1/2 First St.; $100,000; Henry Nollan, pres., treas. and buyer; Hugo Nollan, supt.; Wool and Worsted Sweater Coats; 12 sewing machines; electric; sell direct. .. 15

PENNSYLVANIA.

Philadelphia. Acme Knitting Co.; E. Thompson and Neff Sts.; $5,000; Joseph T. North, pres., supt. and buyer; H. M. Lilley, treas.; Silk Neckties, Infants' Hosiery and Novelties; finish; sell direct. 7
Philadelphia. Advance Hosiery Mills; 2427 N. Mascher St.; Ladies' Cotton Hosiery; steam; F. B. Berlin, N. Y., s. agt.; Edw. Dean, buyer. 25
Philadelphia. Aliand Knitting Co.; 1427 Catherine St.; John M. Anderson and A. E. Allison, props.; Infants' and Children's Hosiery. .....
Philadelphia. American Standard Knitting Mills; Brudnick Bros., props.; 1545 S. 7th St.; Sweater Coats; 4 sewing machines. 3
Philadelphia. Bell Knitting Mills of Penna; Emil Joseph and Rubin Bros.; 208 N. 4th St.; Sweater Coats and Fancy Knit Goods; 6 sewing machines. 10
Philadelphia. Delphia Knitting Mills; 2d and Poplar Sts.; Geo. J. Wolf, mgr. and buyer; Chas. J. Sutphen, supt.; Knitted Silk Neckwear; finish; sell direct. 18
Philadelphia. Elwell, Harry; 1543 Ruan St., Frankford; Silk and Art. Silk Neckties. 30
Philadelphia. Fairmount Knitting Mills; Haber, Neuman & Co., props.; 123 N. 5th St.; Shaker and Full Fashioned Ribbed Sweater Coats; 15 sewing machines; sell direct; buy woolen and worsted... 20
Philadelphia. Girard Knitting Mills; 141 N. 3d St.; M. Silver and S. Shumelman, props.; M. Silver, supt. and buyer; Fashioned Sweater Coats; 10 sewing machines; finish; electric; sell direct. 12
Philadelphia. Gray, Wilfred; Knitted Silk Neckties; 2 full fashion frames; finish; sell direct; buy 12, 13, 14 tram; office, 104 N. 6th St. .....
Philadelphia. Hub Knitting Mills; 36 N. Third St.; H. L. Peterzell, treas.; A. Cohen, mgr. and buyer; Men's Shaker and Full Fashioned Sweaters; 10 sewing machines; buy wool and worsted. 13
Philadelphia. Hughes & Bradley Co.; 837 Market St.; $60,000; Knitted Silk Neckties. .....
Philadelphia. Le Fevre, Chas. & Co.; 257 Market St.; Knitted Silk Neckties. 7
Philadelphia. Miller & Son; 736 Passayunk Ave.; Sweater Coats; sell direct. .....
Philadelphia. Ellis, Morris, Co.; 2420 Waterloo St., Kensington; Seaming, Looping and Finishing of Hosiery in the Grey; office, 31 S. Third St. .....
Philadelphia. Phoenix Sweater Mills; rear 218 Arch St.; Morris Reisen, supt.; Sweater Coats for Men, Women and Children; 18 sewing machines; sell direct; N. Y. office, 366 Broadway. ... 18
Philadelphia. Pillet, Steerman & Co.; 123 N. 3rd St.; Knitted Silk Neckties; buy art. silk and merc. 14
Philadelphia. Reliable Knitting Mills; Lipschutz & Wenger; 271 S. 5th St.; Sweater Coats; sell direct. 14
Philadelphia. Safe-Keep Pocket Hosiery Co.; 1211 Filbert St.; E. H. Morningstar, mgr.; Women's Hosiery with Pocket Attached; sell direct; buy 40 to 50 comber S. I. merc. .....
Philadelphia. Standard Knitting Mills of Pa.; Cohen & Co.; Alex. Seifert, supt.; Shaker Knit Sweater Coats; 10 knitting and 12 sewing machines; electric; finish; sell direct. 10
Philadelphia. Union Knitting Mills of Pa.; 527 Market St.; $15,000; David Frankel, pres. and buyer; D. Rabinovitch, treas.; Sweater Coats; 8 sewing machines; finish; electric; sell direct. 8
Philadelphia. Woolman Bros.; 44 N. 4th St.; Knitted Silk Neckties; sell direct. 5
Philadelphia. Wyoming Knitting Mills; 4525 N. Howard St.; Elias Aden, mgr.; Sweaters, Cardigans and Ladies' Vests; 3 sewing machines; sell direct. 4
Adamstown. Stork, Harry K.; Hosiery; sells in the grey. .....
Allentown. Astrachan Company, Ltd.; $2,500; Astrachan Cloth; 8 knitting heads; electric; Auffmordt & Co., N. Y., s. agts. .....
Allentown. Rittersville Waist Co.; J. Fink Thompson, supt.; Children's Waists; 24 sewing machines; electric. (Mill at Rittersville.) 10
Allentown. Smith, C. G. & C. A.; 314 N. Church St.; Astrachan Cloth and Commission Silk Winding; 4 knitting heads; 6 winding frames. 4
Bangor. Raub, H. F., Silk Co.; $20,000; R. S. Raub, pres.; H. F. Raub, treas.; Silk Gloves, Hosiery and Underwear and Jersey Cloth; electric. (Built 2-story mill, 44 by 82 ft., and dye house, 30 by 54 ft.) 4
Bethlehem. Central Knitting Co.; 12th Ave. and Broad St.; Irvin J. Hunsicker, pres.; Edward S. Buckman, treas. and buyer; Children's Undervests and Misses' Union Suits; 30 sewing machines; electric; Robitscher & Rauch, s. agts. 7
Bethlehem. Graham & Barnes; Saml. Graham, mgr.; Knitted Silk Neckties. .....
Bowmansville. Conestoga Hosiery Co.; W. E. Snader, supt.; 144-needle Half Hose; steam. (Branch of Brownstown.) 40
Cambridge Springs. Cambridge Springs Knitting Co.; $20,000; Geo. L. Wade, pres.; N. H. Bertram, treas.; J. A. Bolard, sec. and mgr.; Geo. Cooper, supt.; Ladies' Cotton Underwear; 10 sewing machines; electric. 6
Carlisle. Interwoven Mills, Inc.; building new mill, 200 by 150 ft., to employ about 400 hands. .....
Denver. Gerhardt, John; 144-needle Cotton Half Hose; sell direct. 15
Galeton. Galeton Knit Goods Mfg. Co.; $6,000; W. G. Johnson, pres.; David Humphrey, sec. and treas. .....
Harrisburg. Modern Textile Co.; 16th and Elm Sts.; $10,000; J. H. Gingrich, pres.; J. F. Heisley, treas.; J. C. Ewing, mgr. and buyer; Misses' and Children's Underwear; 10 sewing machines; electric. 4
Hawley. Hanf & Kollmer; Teutonia Mill; Hudson St.; Fancy Knit Goods; 2 sewing machines; gasoline. 4

Hawley. Kaidy Bros.; Church St.; Knit Scarfs and Shawls. 6
Knoxville. Pioneer Mfg. Co.: $5,000; John E. and G. E. Davis and Fred Walker; Gloves, Mittens, etc. ....
Lansdale. Tonner & Moyer; Hosiery. (Branch of Norristown.) ....
Lehighton. Zimmerman & Altemose; N. 6th St.; E. Braithwaite, supt. and buyer; Ladies' Shaped Vests; 4 sewing machines; electric. 6
Mifflintown. Juniata Hosiery Mills; Max W. and K. O. Nestler, props.; Ladies' All Silk and Silk Boot Hosiery; 4 sewing machines; steam and gas; sell direct. 20
Milton. Keefer Mfg. Co.; $25,000; Fred Leonard, N. T. Marsh, Wm. H. Keiser, Howard Keefer; Leggins, etc. ....
Montello. American Hosiery Mfg. Co.; built new 2-story mill, 40 by 60 ft., and removed here from Reading. ....
Mt. Carbon. Leaman Knitting Mills; Chas. H. Leaman, prop.; Women's Knit Underwear; 6 sewing machines. 4
New Cumberland. Kreider, A. R. & Bro.; Finishing Only. Branch of Annville.) ....
Pottsville. Boltz, Jacob; 317 N. 9th St.; Women's Extra-size Underwear; 4 sewing machines. 6
Pottsville. Ost & Hay; Mound City Knitting Co.; Water St.; Women's Knit Underwear. 5
Pottsville. Valley Knitting Mills; Givler & Ditzel, props.; 9th and Mine Sts.; Women's Ribbed Vests; 18 sewing machines. 10
Pottsville. Yaissle, John; Women's Knit Underwear; 3 sewing machines. 6
Reading. Redcay & Mell; 763 N. 12th St.; C. F. Redcay, pres.; A. H. Mell, treas. and buyer; Mercerized and Cotton Half Hose; electric; sell direct. ....
Reading. Spatz, B. H., Hosiery Mill; 639 Garden St.; $3,000; B. H. Spatz, pres. and treas.; Cotton Half Hose. 12
Schaefferstown. Houser Hosiery Mills; Chas. Houser, pres. and buyer; Isaac Houser, supt.; Men's and Women's Seamless Hosiery; 2 sewing machines; steam; sell direct in grey. 10
Shoemakersville. Merit Underwear Co.; $10,000; Benj. M. Bhaer, treas.; E. T. Williams, mgr.; Women's Underwear; 12 sewing machines; buy 12 to 26 combed and carded. 9
Sinking Spring. Model Underwear Co.; R. F. D. 1; N. H. Fichthorn, E. F. Wentworth; Union Suits; 8 sewing machines; steam and electric; sell direct and through agents; buy 30/1 C. P. 5
Tower City. Tower City Knitting Mill; W. J. Henry & Co.; W. J. Henry, supt. and buyer; Ladies' Knit Underwear; electric. ....
Tower City. Trautman, H. A., Knitting Mill; Grand Ave.; Women's Underwear; 6 sewing machines. 6
Virginsville. Wanner, Chas. A.; 144-needle Seamless Cotton and Silk Half Hose. (Branch of Fleetwood.) ....
York Haven. Penn Hosiery Mill; Seamless Half Hose; electric; H. S. Meyer & Co., s. agts.; I. E. Warner, buyer. 20

SOUTH CAROLINA.

Union. The Gault Mfg. Co.; $10,000; J. H. Gault, pres., treas. and buyer; Men's and Women's Hosiery; dye and finish; steam and electric; B. A. Jacobs & Co., s. agts. (Under construction.) ....

TENNESSEE.

Chattanooga. Madeline Hosiery Mills; Ridgedale. (Branch of Davis Hosiery Mills.) (Building new 2-story brick mill, 200 by 64 ft.) 100
Dayton. Dayton Hosiery Mills Co.; $60,000; J. E. Morgan, treas.; Garnett Andrews, gen. mgr. and buyer. (Plans prepared for 2-story mill, 60 by 122 ft., to be operated by electric power.) ....
Englewood. Englewood Mfg. Co.; $50,000; J. W. Chestnut, pres.; T. J. Lillard, sec. and treas.; Hosiery; dye and finish; steam. (Built 2-story mill, 40 by 65 ft.) 48
Lawrenceburg. May Hosiery Mills; Men's Half Hose. (Branch of Nashville.) (New brick mill erected, 80 by 180 ft.) 75
Morristown. Holston Mfg. Co.; Misses' Fine Gauge Hosiery; electric. (Branch of Lenoir City, where goods are finished.) (Built 1-story brick mill, 200 by 60 ft.) 250
Riceville. Riceville Knitting Mills; $25,000; R. J. Fisher, mgr.; Seamless Hosiery; 30 footers; 20 ribbers; 10 loopers. (Branch of Athens Hosiery Mills, where finishing is done.) ....

UTAH.

Salt Lake City. Lloyd Knitting Mills; 30 Richard St.; $25,000; E. T. Lloyd, pres. and supt.; J. F. Lloyd, treas.; Sweater Coats and Underwear; 12 sewing machines; electric; sell direct. 15

VERMONT.

Bennington. Bennington Hosiery Co.; $50,000; Wm. H. Nichols, pres.; Frank B. Pope, treas.; Henry L. Field, mgr. and buyer; Worsted and Merino Half Hose; 5 ribbers; 5 loopers; dye; Graff Bros., s. agts.; buy 1/18 to 1/50 worsted, 1/18 to 1/70 cotton. 20

WASHINGTON.

Seattle. Octonek Knitting Co.; 425 Union St.; $30,000; Geo. O. Sanborn, pres. and buyer; J. H. Breese, treas.; A. C. Wilhelm, supt.; Sweaters; buy 2/7, 2/30 and 4/15. ....

WISCONSIN.

Brillion. Wisconsin Knitting Mills; Sweater Coats, etc. (Branch of Manitowoc.) ....
Milwaukee. Imperial Knitting Co.; built 2-story and basement reinforced concrete mill, 60 by 130 ft., at 1071 Third St. ....
Oconto. Marinette Knitting Mills; Sweater Coats, etc. (Branch of Marinette.) ....
Whitewater. Bradley Knitting Co.; Finishing Only. (Branch of Delavan.) ....

CANADA.

Ontario, Alton. Dick, Alex.; Heavy Wool Half Hose. ....
Ontario, Appleton. Caldwell, Boyd & Co.; established dept. for manufacture of heavy wool hose. ..
Ontario, Glen Williams. Hinds, Robert; Knit Webbing and Tubing for Glove and Mitt Trade. ....
Ontario, Hamilton. Mercury Mills, Ltd.; 80 Park St.; $1,000,000; Men's, Women's and Children's Hosiery, Seamless and Full Fashioned, and Men's Underwear; 100 sewing machines; electric; dye; sell direct. 150
Ontario, Listowel. Perfect-Knit Mills, Ltd.; $50,000; Max K. Becker, pres., supt. and buyer; Wm. Climie, treas.; Sweater Coats and Knitted Novelties; 11 knitting and 10 sewing machines; electric; sell direct. (Took over Keystone Knitting Co., Georgetown, Ont.) 11
Quebec, Montreal. Regent Knitting Mills, Ltd.; $200,000; C. G. de Tonnancour, pres.; J. F. Lemieux, treas.; L. Marcoux, supt. and buyer; Men's and Women's Sweaters; 10 sewing machines; buy 2/18 worsted, 8s cotton. 18
Ontario, Orangeville. Dods Knitting Co., Ltd.; Flat and Ribbed Wool Underwear. (Branch of Alton.) ....
Ontario, Owen Sound. Banks, H. C.; Sweater Coats, Worsted Half Hose and Novelties. ....
Ontario, Stratford. Williams-Trow Knitting Co.; $60,000; B. M. Williams, pres. and mgr.; Underwear and Knitted Novelties. ....
Ontario, Toronto. Allen Brothers; 813 Gerrard St., E.; Infants' Worsted Hosiery, Silk Heel and Toe. 6

NEW SILK MILLS.

Looms

MASSACHUSETTS.

Fall River. Marshall Woven Label Co.; Lowell and Rodman Sts.; John Marshall, pres.; A. E. Carey, treas. and supt.; Silk and Cotton Woven Labels; dye; steam and electric; sell direct and through H. D. Kirk, Chicago. ....

NEW JERSEY.

Franklin. Frost & Van Riper; Silk Throwing. (Branch of Paterson.) ....
Garfield. Paragon Silk Co.; Broad Silks. (Branch of Paterson.) 71

Midland Park. Schofield, Geo. and James; Broad Silks. ..

Paterson. Farrar, James H., Silk Co.; Ellison St. Extension; Dress and Tie Silks; 640 spindles; sell direct. 34

Paterson. Gerard Silk Mills, Inc.; 181 River St.; $20,000; Isador Hammer, pres. and supt.; Lester B. Samilow, treas. and buyer; Silk Ribbons; L. B. Samilow Co., s. agt. 15

Paterson. Giant Silk Mfrs., Inc.; Reinhard Mill; $100,000; Isaac Mendelson, pres.; Jacob Mendelson, treas.; Silk Goods; 220 looms; sell direct; N. Y. office, 117 E. 24th St. 220

Paterson. Graeffelstein & Rosenthal; Pope Mill; Broad Silks. 59

Paterson. Grobart Co.; 18 Paterson St.; $25,000; Edward Schweser, mgr.; Silk Ribbons. ....

Paterson. King Silk Co.; Barnet Mill; $100,000; Max Heyman, mgr.; Silk Goods. ....

Paterson. Kurkjian, H. H. & Co.; 20 Governor St.; $50,000; Silk Neckties; Tie Silks and Ribbons. ....

Paterson. Passaic Falls Throwing Co.; Cooke Mill; $25,000; Richard Rossiter, treas.; P. Holley, mgr.; Commission Throwing; 7,000 spindles. ....

Paterson. Peerless Warping & Winding Co.; Mulberry and River Sts.; Commission Warping and Winding; 9 frames. ....

Paterson. Schottland, Abraham; 25 Ramapo Ave.; Broad Silk Goods; electric; sells direct. 64

Paterson. Shawin & Barbour; 60 Ryle Ave.; Broad Silks. 50

Paterson. Simon, Breen, Magennis Co.; Todd Mill; $100,000; Joseph Breen, pres., supt. and buyer; F. A. Magennis, treas.; Silk Ribbons; sell direct. 35

Paterson. Taylor-Friedsam Co.; Rosenheim Mill; $500,000; John G. Taylor, pres.; Morris Friedsam, treas.; Herman Bertschy, supt. and buyer; Silk Ribbons. 50

Paterson. Wilde, H. E., Warping & Winding Co.; Slater St. Mills; $10,000; Commission Winding and Warping. ....

Phillipsburg. National Warping Co.; 55 Sitgraves St.; Alphonse Lova and Leonard Orcukto, props.; Commission Winding and Warping. ....

Phillipsburg. Reynolds & Tyrell; Jersey and Sitgraves Sts.; $50,000; Broad Silks. 18

West New York. Salomon & Newman; built new 2-story mill, 100 by 300 ft., equipped with new machinery. (New York City plant discontinued.) .... ..

Wharton. Washington Forge Silk Co.; Benj. W. Mayer, pres.; Jacob A. Widmer, treas., supt. and buyer; Dress and Tie Silks; sell direct. 183

NEW YORK.

Brooklyn. Kahn & Feldman; Bush Terminal Bldg. 20; Silk Throwing; 5,000 spindles. ....

Brooklyn. Venus Silk Glove Mfg. Co.; Franklin, Hayward and Wallabout Sts.; Silk Gloves. (Branch of Bangor, Pa.) 8

Cortland. Tioughnioga Silk Co.; Silk Throwing. .. ..

Gloversville. Normandie Silk Mills, Inc.; $25,000; Geo. Rowland, pres.; Thos. Hubbard, treas.; L. E. Winnie, supt. and buyer; Glove Silk Cloth; 80 spindles; electric; sell direct. 4

Long Island City. Acorn Silk Co.; occupying new mill at 81 Sunswick St.; New York City plant discontinued, taken over Truth Silk Co., Paterson, and removed here. ....

Newburgh. Palatine Silk Co.; $10,000; John Deisseroth, pres. and treas.; F. W. Fulda, supt. and buyer; Dress Silks. 20

Whitestone. Sulzbach, Jacob; built new mill, 150 by 438 ft., one story high. ....

PENNSYLVANIA.

Philadelphia. Penn Ribbon Mills; Manhattan Silk Co.; 3rd and Ontario Sts.; Silk Ribbons; N. Y. office, 95 Madison Ave. 60

Philadelphia. Rosen, J. & Son; Frankford; Silk Ribbons; steam; Max Rosen, buyer. (Branch of Paterson.) 50

Archbald. Clemens Silk Co.; $25,000; Benj. Phillips, pres.; Paul Clemens, treas., mgr. and buyer; Broad Silks; electric. (Built 2-story brick mill, 128 by 38 ft.) 58

Hanover. Levy, E. & H.; building new 2-story mill, 150 ft. long, for manufacture of silk ribbons. ..

Kingston. Storms, A. L.; Walnut Ave.; Silk Throwing; 10,000 spindles; steam and electric. .... ..

Northampton. Feldhege, H. J., Silk Mfg. Co.; Broad Silks. (Branch of Egypt.) ....

Northumberland. Susquehanna Silk Mills; building branch mill, 1 story and basement, 148 by 132 ft. (Branch of Sunbury.) ....

Perkasie. Perkasie Silk Co.; J. H. Frederick; Silk Throwing. (New mill building erected.) ....

Pittston. Hartley Silk Mfg. Co.; Broad Silks. (Branch of Towanda.) (Built new brick mill, 80 by 200 ft.) ....

Pottstown. Seltmann, H.; York and Walnut Sts.; Broad Silks; electric; sells thro' agts. 100

Quakertown. Converters Silk Mills, Inc.; Front St.; $15,000; O. Neuberger, pres.; N. M. Lasker, treas.; L. Mueller, supt.; Throwing and Quilling of Raw Silk; 4,000 spindles; electric; sell direct, 45 Leonard St., N. Y. ....

Quakertown. Maxwell Ribbon Co.; W. Broad St.; Silk Ribbons. ....

Reading. Schaeffer & Co.; 126 Carpenter St.; Chas. P. Schaeffer, pres. and buyer; Paul H. Schollenberger, treas.; Victor W. Schaeffer, supt.; Silk, Art. Silk and Mercerized Cotton Shoe Laces; electric; sell direct and thro' Mulford, Cary & Conklin Co.; buy 16/2 to 40/2 and 10/3 merc. and plain cotton. ....

Scranton. National Silk Throwing Co.; 1015 N. Main Ave.; $25,000; Jay L. Wolf, pres.; Geo. N. Campbell, treas.; N. P. McTague, supt. and buyer; Silk Throwing; 5,000 spindles; steam. .... ..

Scranton. Scranton Silk Co.; E. Baeurle, supt.; Silk Ribbons; electric; sell direct; H. H. Weil, buyer. (See United Ribbon Co., Paterson.) 50

Shamokin. Perfect Silk Throwing Co.; $35,000; J. E. Knepka, pres.; W. H. Lee, treas.; Silk Throwing; 10,000 spindles. ....

Tamaqua. Pennsylvania Silk Spinning Co.; $10,000; H. O. Jones, pres., supt. and buyer; M. E. Jones, treas.; Commission Throwing; 5,000 spindles; electric. ....

Warren. Warren Silk Mfg. Co.; $60,000; Jacob Thissen, supt.; Silk Gloves and Hosiery. (Two-story brick and steel building, 50 by 130 ft., under construction.) ....

Watsontown. Watsontown Throwing Co.; $40,000; Silk Throwing; A. D. Baldwin, supt. and buyer. ..

York. David, B. Edmund; Silk Goods; N. Y. office, 440 Fourth Ave. (Branch of Paterson.) 150

RHODE ISLAND.

Pawtucket. Eastern Silk Winding & Warping Co.; 242 Pine St.; E. Fowler, mgr.; Silk Warps on Commission; 480 spindles; electric. ....

Phenix. Stoppard, William & Co.; Wm. Stoppard, treas. and buyer; Silk Lace Shawls; electric. (Begin mfg. Jan. 1.) ....

VIRGINIA.

Culpeper. Culpeper Silk Mills; $50,000; James Rigby, Jr., pres.; A. L. Goodloe, treas.; Broad Silks; electric; sell direct. 80

Front Royal. Schwarzenbach Huber Co.; Broad Silks. (Branch of West Hoboken, N. J.) ....

WEST VIRGINIA.

Keyser. Klots Throwing Co.; Commission Silk Throwing. (Branch of Carbondale, Pa.) ....

MISCELLANEOUS NEW MILLS.

GEORGIA.

Savannah. Floyd Bagging Mills; $50,000; T. B. Floyd, pres.; M. H. Floyd, treas.; T. B. Floyd, Jr., agt. and buyer; J. V. Shier, supt.; Jute Bagging; 100 spindles; 3 looms; electric; sell direct.

ILLINOIS.

Chicago. Sterling Dye Works; 1800 Ballou St.; Arthur L. Stuart, mgr. and buyer; Dyers of Millinery Goods; steam and electric.

MASSACHUSETTS.

Gleasondale. Standard Brake Lining Co.; A. & C. W. Hanslip, props.; Woven Asbestos Brake Linings and Clutch Facings; 2 looms; dye; electric.

Lowell. Columbia Textile Co.; Percy Gulline, agt.; $150,000 capital.

Lowell. New England Cable Co.; Howe St.; D. J. McDougal, pres.; Samuel Dunsford, treas. and mgr.

Taunton. Lobsitz, Maurice, Mfg. Co.; Wool and Wool Stock, Garnetted Silks, Noils. (Branch of Phila.)
Westboro. Crown Linen Mills; $50,000; F. A. Gordon, pres.; H. G. Hassall, treas.; Absorbent Linen; dye; steam; Brewer & Co., Worcester, Mass., s. agts.

NEW HAMPSHIRE.

North Salem. New Hampshire Shoddy Co.; Shoddy and Bats. (Occupying part of old Atlas Woolen Mill; installed new machinery and steam power equipment.)

NEW JERSEY.

Montville. Montville Finishing Co.; operating in one of buildings of John Capstick & Sons; erecting brick addition, 125 by 50 ft.
Paterson. Perfection Silk Dyeing Co.; $20,000; Marino Degrado, Anthony and Henry Nazzaro.

NEW YORK.

Auburn. Auburn Converting Co.; Geo. Underwood, Jr., pres.; W. E. Penny, gen. mgr.; Linen, Cotton and Flax Twines and Tinsel Cord; 200 spindles; dye; electric; sell direct; buy 1 to 24 skeins.
Glenham. Beacon Bleachery; Glenham Embroidery Co.; Bleaching and Finishing of Embroideries; electric.
New York City. Folk Textile Printing Co., Inc.; 117 Spring St.; $10,000; John Folk, pres.; C. F. J. Laase, treas.; Imitation Embossing of Velvets, Silks, etc.
New York City. Phoenix Asbestos Mfg. Co.; $10,000; Asbestos Packing; Wm. R. Barrett, Mary E. Tryson and Sidney S. Levine.

NORTH CAROLINA.

Greensboro. Proximity Mfg. Co.; equipped new dyeing and finishing plant, operated by electricity, at cost of $150,000 to $200,000, for dyeing and finishing of goods made outside.

PENNSYLVANIA.

Philadelphia. Columbia Silk Dyeing Co.; 1726 N. Howard St.; Dyeing of Real and Art. Silk and Silk Hosiery; capacity, 1,200 lbs. per day.
Philadelphia. Frankford Silk Finishing & Moire Works; Felix Verweken, prop.; Bermuda, between Orthodox St.; Finishers of Broad Silk, Ribbons, etc.
Philadelphia. Novelty Yarn Co.; 110 W. Oxford St.; Thomas Henry, Jr., mgr.; Novelty Yarns; 21 knitting frames.
Philadelphia. Tioga Dye & Finishing Works; Tierney & Carr; 2nd and Diamond Sts.; Dyeing, Finishing and Packing of Hosiery; capacity, 1,000 doz. per day; Frank Carr, buyer.
Philadelphia. Tomalino & Elliott Silk Dyeing Co.; 4356 N. Gratz St., Nicetown; H. Paul Elliott, treas.; Dyeing of Silk and Art. Silk Skeins.
Allentown. Jordan Silk Dyeing Co.; $15,000; Wm. A., Edw. F. and August L. Gehringer.
Easton. Easton Silk Dyeing & Finishing Co.; A. J. Keenan, pres. and buyer; Charles Zwald, treas.; Dyeing and Finishing of Silk and Silk Mixed Piece Goods. (Built and equipped new plant.)

RHODE ISLAND.

Pawtucket. Rhode Island Textile Co.; rear 47 East Ave.; $10,000; Arthur L. Kelley, Jr., pres.; Geo. F. Kelley, treas.; John H. Conrad, mgr. and buyer; Cotton and Silk Braids; 250 braiders; electric; sell direct.
Providence. Windsor Dyeing & Finishing Co.; $75,000; John Bigbie, William Bowe, Geo. A. Fredenberg and A. J. Carpenter; Converters of Yarns.
Woonsocket. Woonsocket Falls Mill; $100,000; John Turner, Arthur Robertshaw and Otto Timme. (Bought White Mill and made extensive repairs and improvements. Will probably manufacture plushes.)

TEXAS.

Dallas. Dallas Waste & Bagging Mills; $300,000; M. H. Thomas, pres.; F. D. Thomas, sec. and treas.; Jute Bagging; capacity, 1 carload per day.

WISCONSIN.

Milwaukee. Wisconsin Mat Co.; 392 Sixth St.; $10,000; F. A. Escott, pres.; Fred E. Goes, treas.; B. F. Buticofer, supt.; Coco Mats and Matting; 30 looms; electric; sell direct.

CANADA.

Ontario, Cobourg. Cobourg Dyeing Co., Ltd.; $190,000; Thos. Whiteley, pres.; David C. Dick, vice-pres. and man. dir.; W. M. Hilliard, sec. and treas.; Piece Dyed Woolens, Worsteds, Broadcloths, etc.; capacity 150 pieces per day; water and electric. (Begin operations, May 1914.)
Ontario, Gueiph. Canada Flax Mills, Ltd.; built $100,000 branch plant here. (Main office, Toronto.)
Ontario, St. Catharine's. Canadian Flax Mills, Ltd.; Geo. H. Campbell, supt. and buyer; Flax Fibre and Tow Retted; electric. Branch of Toronto. (Expect to build spinning mill in spring.)

Projected Industries

Under this head ere enumerated such projects as are now in course of construction, or which in all probability soon will be, but are not sufficiently far advanced to be properly identified in the list of new mills.

COTTON

CALIFORNIA.

Colton. Olympia Cotton Mills; $1,325,000; M. W. Durham, promoter; Cotton Goods; electric; dye.
Long Beach. Los Angeles Cotton Co., Ltd.; $750,000; propose to build 10,000-spindle mill; Benj. F. McLouth, A. B. Johnson, Arthur Bridgeman and others interested.

NEW YORK.

Brooklyn. Fulton Bag & Cotton Mills; will erect 8-story factory building and 16-story warehouse, for making up product of mills at Atlanta, beginning spring 1914.
New York City. Robinson, Geo. W.; City Island; to build 2-story mill, 50 by 100 ft., to be equipped with 10 looms for weaving sail duck.
New York City. Sargent, S. B.; Cotton Damasks; 60 looms.

NORTH CAROLINA.

Charlotte. Chas. B. Skipper, John C. Rankin and S. M. Robinson organizing company to build 5,000 spindle cotton yarn mill near here.
Greensboro. Revolution Cotton Mills; enlargements planned to double capacity of plant at cost of $1,125,000.

OKLAHOMA.

Oklahoma City. Whaley, W. B. Smith; promoting $10,000,000 cotton mill company with proposed equipment of 600,000 spindles and 15,000 looms.

SOUTH CAROLINA.

Fort Mill. Fort Mill Mfg. Co.; plans prepared for new mill building, 125 by 300 ft., to be equipped with 600 automatic looms.
Graniteville. Graniteville Mfg. Co.; plan to increase capital to $1,000,000 and add 700 looms.

WOOLEN.

MINNESOTA.

Duluth. Minnesota Woolen Co.; $20,000; Philip G. Brown, pres.; J. F. Wittenberg, treas.; may build mill for manufacture of all-wool blankets.

OHIO.

Columbus. State Penitentiary; plant for mfr. of blankets and other woolen fabrics to be established.

PENNSYLVANIA.

Philadelphia. Fetterolf, H. G.; to build $100,000 mill on land purchased at Stenton Ave. and Louden St., Germantown.

KNIT.

GEORGIA.

Lafayette. Fortune Hosiery Mill; P. D. and A. R. Fortune and J. C. Miller; will build mill; 60 machines.

NEW JERSEY.

Belvidere. Allen, John; bought land and awarded contract for building for hosiery mill.
Newark. Lindner, C. R.; 500 Avon Ave.; Sweaters. (Arranging for equipment.)

PENNSYLVANIA.

Philadelphia. Floor of building at Van Kirk and Erdrich Sts., Wissinoming, being equipped with full fashion machines for manufacture of silk hosiery, neckties, mufflers, etc.
Denver. Fink, Dr. W. D.; considering establishment of plant for manufacture of ladies' cotton ribbed underwear.
Reamstown. Becker, Ray F.; expects soon to start plant for manufacture of seamless hosiery.
Royersford. Progressive Knitting Mills; plans prepared for 4-story mill, 138 by 60 ft.; company to remove from Spring City on completion.
Sunbury. H. A. Boyer and G. E. Trout: establishing hosiery plant to employ about 100 hands.
Tower City. S. D. Bausher and J. B. Lesher; organizing $30,000 company to build knitting mill here.
Wilkesbarre. Werkheiser, R. C.; planning to establish plant for manufacture of hosiery.

SOUTH CAROLINA.

Columbia. Graham, J. M. & Son; 612 Laurel St.: to establish plant for knitting fine cotton hosiery.

VIRGINIA.

Suffolk. Turner, A. A.; East Suffolk; reported will establish knitting mill.

CANADA.

Alberta, Medicine Hat. H. A. Bonner, of Toronto, planning to establish knitting plant at Red Cliff, a suburb.

MISCELLANEOUS.

NEW JERSEY.

Camden. Camden Dyeing & Finishing Works; River Ave. below State St.; plans prepared for 46 by 54 ft. dye house and 17 by 32 ft. boiler house.

PENNSYLVANIA.

Hollidaysburg. McCurdy, Samuel; proposes to establish plant for manufacture of crash toweling.

Important Changes

COTTON,

ALABAMA.

Bon Air. Danville Knitting Mills; purchased plant of Coosa River Spinning Co. and operating in manufacture of yarns for mills at Danville, Va.
Jacksonville. Verlina Mills; taken over by Profile Cotton Mills; will be operated with new equipment.
Selma. Estelle Cotton Mills; new company operating; S. H. Goodin, pres.; H. H. Stewart, mgr.; extensive improvements made.

CONNECTICUT.

Norwich. Murphy, Wm., Mfg. Co.; Hiscox Bldg.; Wm. H. Murphy, prop.; Geo. McKay, supt.; Cotton Clothes and Fish Lines, Sash Cord, etc. (Formerly Oakdale Cordage Co., Turnerville.)
Putnam. Nightingale-Morse Mills, Inc.; $600,000; Wm. G. Nightingale, pres.; John K. H. Nightingale, treas.; new company operating Morse, Nightingale and Powhatan mills.
Versailles. Versailles Sanitary Fibre Mills; Hygienic Fibre Co., props.; $50,000; Chas. A. Kittle, pres.; Benj. W. Cutler, secy. and buyer; Geo. H. Booth, agt.; H. E. Flagler, supt.; Absorbent Cotton, Aseptic Gauze, Sanitary Napkins and Yarns; 7,300 spindles 62 knitting machines. (New company operating plant of Chas. A. Kittle, formerly Uncasville Mfg. Co.)

GEORGIA.

Griffin. Kincaid Mfg. Co.; purchased Cherokee Mills and increased equipment.
West Point. Lang Cotton Mills; reorganization of Lang Mfg. Co.; A. C. Smith, pres. and buyer; J. Heinzfeld, treas.; W. A. Reed, supt.; electric power equipment installed.

MASSACHUSETTS.

Boston. Atlantic Rope & Line Co.; 47 Field St., Roxbury; R. Delaney, mgr. (Succeeded Norman Mfg. Co.)
Lawrence. Pacific Mills; purchased property and assets of Atlantic Cotton Mills.
New Bedford. New Bedford Textile Co.; purchased and operating plant of Mt. Pleasant Banding Co.
Plympton. Futurity Thread Mfg. Co.; $100,000; H. C. Bullock, treas.; Cotton Shoe Threads, Commission Twisting and Winding; steam and water; dye. (Succeeded Bullock Thread & Twine Co.)
South Sudbury. Massachusetts Waste Co.; $99,000; Frank P. Houghton, pres.; J. P. Gillette, treas.; Cleaning Cotton Waste. (Succeeded Am. Cotton Waste Co.)
Worcester. Swananoa Mills, Inc.; 43 Lagrange St.; $10,000; Thomas Allen, Jr., pres.; Benj. S. Clark, treas. and buyer; Cotton and Silk Narrow Fabrics. (Succeeded L. D. Thayer Mfg. Co.)

MISSISSIPPI.

West Point. Lorraine Cotton Mills; $125,000; C. E. Wilkins, pres.; J. R. French, treas. and buyer. (New company operating West Point Cotton Mills.)

NEW JERSEY.

Newark. Woodside Mfg. Co.; $25,000; Edwin C. Sharp, pres.; A. H. Sharp, treas. (Succeeded Kellogg & Sharp Mfg. Co.)
Bessemer City. Huss Mfg. Co.; taken over Osage Mfg. Co.

NORTH CAROLINA.

Chapel Hill. Durham Hosiery Mills No. 7; Cotton Yarns. (Formerly T. F. Lloyd Mfg. Co.)
Cumberland. Necronsett Mills; $400,000; J. Frederic Houston, pres.; Dexter Stevens, vice-pres. and gen. mgr.; Arthur R. Heist, sec. and treas. (Succeeded J. Frederic Houston & Co.)
Fayetteville. Cape Fear Cotton Mills; $100,000; A. R. McEachern, pres.; Walter McDonald, supt.; new company formed to operate plant of Lakeview Mfg. Co.; extensive repairs being made.
Monroe. Jackson Mills Co.; $125,000; Cotton Blankets. (Reorganization of Monroe Cotton Mills.)
Taylorsville. Watts Mfg. Co.; weaving dept. discontinued; 6,000 additional spindles installed; will make yarns only.

PENNSYLVANIA.

Philadelphia. Alva Tape Mills; 5th and Columbia Ave.; Thos. McNair, supt. and buyer; 34 looms. (New name for plant of Andrew Michie.)
Philadelphia. American Textile Banding Co.; 3rd and Moore Sts.; $20,000; Thomas B. Haigh, pres.; M. Jefferson, treas.: Harry Jefferson, supt.: 110 looms; Spindle Banding and Tapes. (Formerly at Methuen, Mass.)
Philadelphia. Fox Chase Mills; Fox Chase; James H. Craig, pres.; E. W. Kelso, treas.; Turkish Towels and Bath Robe Cloth; 60 narrow and 20 wide looms; dye and bleach; steam; sell direct; buy 12 and 14. (Succeed Belmont Mills.)
Philadelphia. Philadelphia Thread Co.; Mascher St. and Lehigh Ave.; D. H. McKinley, mgr.; Glazed Threads and Sewing Cottons. (Equipment of Lansdale Thread Co.)
Philadelphia. Sheerr, Phillip L.; Howard and Palmer Sts.; Hair Cloth; 60 looms; sells direct; buys 1/14, 2/30 warps. (Taken over equipment of Phila. Hair Cloth Co.)
Philadelphia. Strange, Thomas & Sons; Green Lane and Mitchell St.; taken over Empire Bed Spread Mills.
North Wales. Montgomery Mills Co.; $15,000; F. D. Frissell, pres. and buyer; E. M. Smith, treas.; John Neary, supt. (Operating Montgomery Mills of Russell Mfg. Co.)

RHODE ISLAND.

Pawtucket. Oswegatchie Textile Co.; 96 Broad St.; $100,000; John T. Kirk, pres.; Fredk. F. Halliday, Jr., treas.; John W. Ramsbottom, agt. and buyer; Wm. Hill, supt.; Ladies' Shawls, Baby Robes and Novelties; 12 looms; electric; sell direct. (Succeeded to business of Wm. Hill.)

SOUTH CAROLINA.

Blacksburg. Broad River Mills; $50,000; W. C. Hamrick, pres.; D. C. Ross, secy. (New company operating Whittaker Cotton Mill.)

TENNESSEE.

Chattanooga. Aseptic Cotton Products Co.: $500,000. (Succeeded Southern Aseptic Cotton Co. Capital increased to provide for enlargements and improvements to cost $250,000.)
Trenton. Lovera Cotton Mills: $50,000; R. A. Love, pres. (Taken over Trenton Cotton Mills.)

WOOLEN

CALIFORNIA.

Eureka. Eureka Woolen Mills; F. Carter, gen. mgr.; 3 sets; 40 looms; electric; dye and finish. (Taken over Humboldt Bay Woolen Mills Co.)

MAINE.

Camden. Lincoln Woolen Co.; Chas. I. Lincoln, mgr.; Woolen Goods. (Operated by Parker, Wilder & Co.)
Pittsfield. Smith Textile Co., Inc.; new company succeeding to business of Smith Woolen Co., Fred R. Smith at head.
Skowhegan. American Woolen Co.; taken over former plant of Marston Worsted Co.

MASSACHUSETTS.

Holden. Darling Woolen Mill Co.; taken over and operating old Dawson Mill.
Methuen. Merrimac Valley Mills; Edwin J. Hylan, prop.; Worsted Dress Goods. (New concern operating plant of Tremont Worsted Mills.)
Methuen. Merrimack Mills; Alfred C. Gaunt, prop.; Worsted Goods and Commission Dyeing and Finishing; operating plant formerly occupied by Marshall Worsted Co.
Millbury. Millbury Spinning Co.; C. A. Root, treas.; Worsted Yarns. (Equipment of Brown & Whittier, Lawrence, Mass.)
Webster. Boston Felt & Rubber Co.; $50,000; Chas. B. Colley, treas.; Henry C. Richardson, supt. (Succeeded Webster Felt & Rubber Co.)

NEW HAMPSHIRE.

Penacook. Brampton Woolen Co.; taken over and operating as a branch old plant of Concord Mfg. Co.

NEW JERSEY.

Gloucester City. Breslin Bros. Co.; $100,000; taken over and operating plant of Fries-Harley Co.; also absorbed Gothic Wilton Rug and Carpet Co. of Philadelphia.

OHIO.

Ashtabula. Ashtabula Worsted Co.; $100,000; new company operating Ashtabula Worsted Mills; equipment increased.

PENNSYLVANIA.

Philadelphia. Bunkin & Howard Spinning Mills; Howard and Berks Sts.; $10,000; Paul Bunkin, pres. and treas.; Edw. T. Howard, mgr.; 5 to 50 Woolen and Merino Knitting and Weaving Yarns. (Operating former plant of Henry Grant.)
Philadelphia. Holliday & Zahn; Burnside St., Manayunk; Woolen and Merino Yarns; taken over plant of Morris & Ott.
Philadelphia. Kelley, Patrick; Ripka Mill, Manayunk; Woolen and Merino Yarns. (Operating former plant of Holliday & Zahn.)
East Brady. Penmomic Co. (Succeeded East Brady Woolen Co.)
Norristown. Woodstock Woolen Co.; $60,000; W. S. McCarthy, John J. McClosky and Wm. Spink and Wm. R. Taylor. (Taken over Woodstock Mills.)
Reynoldsville. Shapiro, Saml.; Pile Fabrics. (Purchased plant of Greenblatt Textile Co.)

RHODE ISLAND.

Woonsocket. Paragon Worsted Co.; started up old plant on S. Main St.; 26 looms; operated as annex of Providence plant.

WASHINGTON.

Ellensburg. Ellensburg Woolen Mills; $165,000; J. H. Smithson, pres.; A. C. Spalding, treas. and agt.; A. L. Reid, supt. (Succeeded Washington Woolen Mills Co.)

WISCONSIN.

Onalaska. Western Spinning Mill; Mule Spun Woolen Yarns and Cotton Covered Yarns; 1 to 20 cut; 2 sets; 560 mule and 260 ring spindles; sell direct; D. C. Stickler, buyer. (Operating former branch of Onalaska Woolen Mfg. Co.)

CANADA.

Ontario, Lanark. Caldwell, Boyd & Co., Ltd.; purchased, reequipped and operating plant of W. C. Caldwell Co.

KNIT.

ILLINOIS.

Chicago. Royal Knitting Mills; bought Winchester Knitting Mills; increasing equipment to 72 knitting and 54 sewing machines.

MASSACHUSETTS.

Reading. Middlesex Knitting Co., Inc.; occupying new quarters in Black's Block, with additional space, which will be utilized for increased equipment.

MICHIGAN.

Burr Oak. Adrian Knitting Co.; purchased plant of Whitehouse Underwear Co., to be operated as branch of Adrian.

NEW JERSEY.

Morristown. Common Sense Suspender Co.; $200,000; Fred Muchmore, pres.; J. L. Talmadge, treas.; John E. Dakin, supt. and buyer; Seamless and Full Fashioned Hosiery; taken over plant of John C. Dakin, New Brunswick.

NEW YORK.

Cohoes. Anchor Knitting Mills Co., Inc.; $50,000; C. R. North, pres. and mgr.; C. F. North, treas. (Succeeds to business of Anchor Knitting Mills of Chas. F. North.)
Cohoes. Hope Knitting Co.; operating former plant of Parsons Mfg. Co. as branch.
Elmira. Campbell Knitting Mill Co.; reorganized with following officers: John F. Heffernan, pres.; A. J. Armstrong, vice-pres. and selling agt.; B. J. Heffernan, sec. and buyer; W. S. C. Wiley, supt.
Glendale. Ascher, Simon & Co.; Bishops Securities, Inc.; Loft Bldg., Dry Harbor Road, new address; operating 100 knitting and 25 sewing machines.
Mohawk. Elastic Spring Knit Corp.; $250,000; Walderma C. Schaufler, pres. and buyer; W. J. Reineke, treas.; F. L. Riehr, supt.; Wool and Worsted Union and Two Piece Ribbed Underwear for Men, Women and Children; 8 sets cards; dye (yarn and piece); steam and electric; Clift & Goodrich, N. Y., s. agts.
Parish. Parish Knitting Co.; $20,000; Wm. Gee, Wm. H. Spanswick and Albert R. Jennings. (Taken over branch plant of Wm. H. Spanswick Mfg. Co.)
Valatie. Standard Mfg. Co.; E. S. Sanborn, supt.; Sweater Coats; 4 sets; 26 knitting machines; 24 sewing machines; steam; Hecht & Campe, N. Y., s. agts.; John A. Nuttall, buyer. (Operating in former plant of Valatie Knitting Co.)

NORTH CAROLINA.

Marion. Carolina Hosiery Mills; J. G. Berry, supt.; J. W. Streetman, buyer; Ladies' Hosiery. (Former plant of Mt. Ida Hosiery Mill.)
Penrose. Calhoun Hosiery Co.; $125,000 (authorized); J. G. Scrutchin, Jr., pres. and treas. (Company organized to take over former hosiery knitting plant of Penrose Mfg. Co.)
Raleigh. Watkins Hosiery Co.; Belmont St.; new location; removed here from Wake Forest.

NORTH DAKOTA.

Fargo. Fargo Knitting Mills Co.; M. E. Linke, mgr. (Succeeded Red River Knitting Mills.) (Increasing equipment.)

OHIO.

Columbus. Columbus Knitting & Mfg. Co.; new company organized to succeed W. H. Phelps Co.
Piqua. Imperial Underwear Co.; $150,000; A. D. Hance, pres.; C. E. Stuart, treas. and buyer; absorbed Stuart-Hance Underwear Co.
Portsmouth. Mitchell Mfg. Co.; $100,000; John E. Williams, pres.; C. E. Dowling, treas.; C. M. Mitchell, mgr. and buyer; J. C. Scott, supt.; Men's Medium Grade Union Suits; 20 knitting machines; 75 sewing machines. (Taken over former plant of Scott Knitting Co.)

Tippecanoe City. Superior Underwear Co.; Finishing only; 50 sewing machines; branch of Piqua. (Former plant of Tippecanoe Underwear Co.)

PENNSYLVANIA.

Philadelphia. Alberts, Carl; Front St. and Lehigh Ave. (Taken over and operating plant of Scotland Mills Hosiery Co.)

Philadelphia. Eagle Hosiery Mills; Chas. Ackerman, prop.; 110 Turner St. (Formerly Bridesburg Hosiery Mills Co.)

Philadelphia. Schorr Knitting Co.; 334 Market St.; Silk Knit Neckwear. (Succeeded Majestic Knitting Mills.)

Philadelphia. Wear-Best Knitting Co.; Jasper St., below Orleans; new address and new name for Watt & Beck Hosiery Co.

Bridgeport. Bridgeport Knitting Mills, Inc.; $50,000; Jos. S. Rambo, pres.; H. K. Regan, treas. (New company operating Kaufman Knitting Mill.)

Gibraltar. Lando, W. H.; Fine Gauge Mercerized Half Hose; 35 knitting machines. (Formerly at Reading.)

Hamburg. Clover Underwear & Bleach Works; J. Edw. Miller, Oliver A. Law and George A. Zook. (Formerly Gotham Underwear Mill No. 2.)

Huntingdon. Huntingdon Hosiery Mills; C. J. Speck, mgr.; Half Hose; 40 knitting machines. (Former plant of H. E. Funk combined with that of C. J. Speck of Mill Creek.)

Kutztown. Deisher Knitting Mills; $100,000; H. K. Deisher, pres., supt. and buyer; Philip D. Hoch, treas. (Incorporation of business of H. K. Deisher; equipment increased.)

Pottsville. Hock, John, Knitting Mills; $10,000. (New company operating Anthracite Knitting Mill.)

South Bethlehem. Hall Hosiery Co.; 947 Broadway; F. C. Christman, supt.; Men's, Women's and Children's Hosiery. (Taken over South Bethlehem Ktg. Mills.)

Towanda. Allensville Hosiery Mills; Vance A. Zerby, pres.; Harry L. Hubbs, treas. (Merger of Allensville Hosiery Mills of McVeytown and Towanda Mfg. Co.)

RHODE ISLAND.

Coventry Centre. Rhode Island Hosiery Co.; Jas. H. Hill & Sons, props.; Saml. Youde, supt.; Lisle, Mercerized and Silk Hosiery. (Formerly at Providence.)

TENNESSEE.

South Pittsburg. Aycock Hosiery Mills; $100,000; R. C. Aycock, pres., treas. and buyer; W. E. Catron, supt.; reorganized. (Building new dye house and finishing dept.)

VERMONT.

Bennington. E. Z. Waist Co.; purchased and operating in former plant of Vermont Hosiery Co.

SILK.

CONNECTICUT.

Mystic. Mystic Silk Co.; $10,000; M. A. Kleinberger, pres. and treas.; J. B. Faisant, supt. (New company operating Ninigret Mills; equipment increased.)

Norwich. West Side Silk Mill; Schwarzenbach, Huber Co.; M. L. Bergstresser, supt.; Broad Silks; 167 looms; steam. (Former plant of Rogers, Thompson, Givernaud Co.)

NEW HAMPSHIRE.

Allenstown. Suncook Artistic Webbing Co.; School St.; $10,000; Jennesse S. Dearborn, pres.; George F. Georgi, treas.; Emil Zinn, supt. and buyer; Narrow Silks, Insertions, Trimmings and Edgings; 11 looms; electric; sell direct.

NEW JERSEY.

Alpha. Alpha Silk Throwing Co.; $25,000; G. A. Roeth, Raymond Blum and Clarence Walters. (Organized to take over Alpha Silk Co.'s plant.)

Homestead. Atlas Finishing Co.; $50,000; E. Gerli & Co. (Operating plant of Rogers, Thompson, Givernaud Co.)

Paterson. Klein & Levy; 40 Lawrence St.; Broad Silks; 24 looms. (Formerly S. Klein & Sons.)

Paterson. Krachman & Margolis; Bridge and River Sts.; Broad Silks, 36-in. Goods; 20 looms; sell direct. (Succeeded Fidelity Silk Co.)

Plainfield. Jersey Silk Mill. (New company operating plant of Mitchell-Watchung Silk Co., with increased equipment.)

West Hoboken. Migel, M. C. & Co.; David Ross, supt. (Operating old Rogers, Thompson, Givernaud plant.)

NEW YORK.

New Berlin. Kidney, Richard S.; prop. of Auburn Silk Mill. (Taken over and operating plant of New Berlin Silk Mfg. Co.)

Oneida. Heminway, M. & Sons Silk Co.; purchased and operating silk dept. of Oneida Community, Ltd.

Theresa. Lincoln Silk Co. of Paterson. (Taken over and operating Theresa Silk Mill.)

PENNSYLVANIA.

Berwick. Muster Company; $15,000; Fred Muster, pres., supt. and buyer; Ernest Muster, treas.; Thrown Silk; 6,000 spindles. (Took over Tamaqua Silk Throwing Mills.)

Chambersburg. Piedmont Silk Co., Inc.; $35,000; Henry T. Fleitmann and H. B. Stanford. (New company operating former branch of Cedar Cliff Silk Co.)

Coatesville. Ashley & Bailey Co.; plant purchased by S. J. Aronsohn, Inc., Paterson. To be continued in operation.

Dushore. Mason Silk Mills; operating 120 looms in former plant of Loyal Sock Silk Co.

Emaus. Emaus Silk Co.; $50,000; J. H. Frederick, pres. and buyer; Broad Silks; 250 looms; I. A. Bardenheuer, N. Y., s. agt. (New company occupying plant of Keystone Silk Mills.)

Forest City. Dery, D. G.; Silk Throwing; 10,000 spindles; main office, Allentown. (Taken over plant of Alfred Harvey Silk Co.)

Hawley. Realty Weaving & Spinning Co.; $100,000. (Takes over Bellmont Silk Mills.)

Marietta. Dery, D. G.; purchased plant of Ashley & Bailey; replacing old looms with new equipment.

Parsons. Leon-Ferenbach Silk Co.; Parsons Branch; Geo. G. Tillotson, mgr. (Formerly Parsons Silk Throwing Co.)

Reading. Haledon Throwing Co.; Silk Throwing; branch of Paterson. (Taken over throwing dept. of Berkshire Silk Mill.)

Reading. Lion Silk Mills; H. I. Felberbaum, prop.; N. Y. office, 111 Fifth Ave. (Occupying part of Berkshire Silk Mill.)

Reading. Schuylkill Silk Mills; occupying new mill; added 10 Milanese lace machines and lace warping mills. (Succeeded Reading Glove & Mitten Co.)

Ridgeway. Holmes Silk Co.; Broad Silks; 40 looms. (Taken over Ridgeway Silk Mill.)

Taylor. Expert Silk Co.; Geo. and David Kaufman, props.; Broad Silks. (Removed from Paterson and occupying plant of Taylor Worsted Co.)

VIRGINIA.

Charlottesville. Charlottesville Silk Mills; $75,000 (authorized); E. C. Rolker, pres. and buyer; Joseph P. Ryan, treas.; Bolt Silk Goods; 42 looms; electric; Rolker & Murphy, N. Y., s. agts. (Taken over Philipsburg, N. J., Silk Co.)

MISCELLANEOUS.

NEW HAMPSHIRE.

North Salem. Emmons, H. I., Co.; Dyeing, Bleaching and Cleaning of Waste. (Formerly at Methuen, Mass.)

NEW JERSEY.

Paterson. Kaufman Silk Dyeing Co.; $30,000. (New company formed to take over plant of Schetty Silk Dyeing Co., 188 Putnam St.)

Waldwick. Waldwick Bleachery; $100,000. (New company organized to take over Ramapo Bleachery.)

PENNSYLVANIA.

Towanda. Schetty Bros. Co. (Succeeded Schetty Silk Dyeing & Finishing Co. and removed here from Paterson. Adding dept. for dyeing of blacks.)

RHODE ISLAND.

Pawtucket. Le Bon Bleach & Dye Works; 1115 Central Ave.; John Kinniburgh, supt.; Bleaching and Dyeing of Cotton Yarns and Narrow Fabrics, Knit Goods, Rubber Linings and Astrachans, also Artificial Silk; steam and water; Matthew Kinniburgh, buyer. (Formerly Pawtucket Dyeing & Bleaching Co.)

Enlargements and Improvements

COTTON.

ALABAMA.

Athens. Fulton Cotton Mill Co.; (a reorganization of the Athens Cotton Mill Co.); built new brick weaving mill, 125 by 152 ft., for manufacture of ducks and drills; installed 129 looms.

Alexander City. Russell Mfg. Co.; installed 6,000 additional spindles and electric drive equipment; built addition to house this increase.

Birmingham. Avondale Mills; about $50,000 expended for new equipment, including 20,000 spindles and carding machinery.

CONNECTICUT.

East Killingly. International Cotton Mfg. Co.; built new bleachery and storehouse and installed 8 new cards and other machinery.

Killingly. Killingly Mfg. Co.; control purchased by interests connected with Goodyear Tire & Rubber Co.; built addition and installed new machinery for manufacture of tire fabrics.

GEORGIA.

Atlanta. Exposition Cotton Mills; capital increased $200,000; installed 5,000 additional spindles and 400 looms to replace old ones.

Eatonton. Imperial Cotton Mills; built 2-story addition, 180 by 75 ft., and added 6,200 spindles and 160 looms, doubling capacity.

La Grange. Dixie Cotton Mills; built new 2-story mill, 109 by 196 ft., at cost of $100,000; using electric power in both old and new plants; added 13,000 spindles.

Macon. Bibb Mfg. Co.; built new 2-story brick and concrete mill, 350 by 75 ft., with electric power equipment; added 18,000 spindles.

Manchester. Manchester Cotton Mill; building 2-story brick addition; will add 5,000 spindles.

MASSACHUSETTS.

Adams. Renfrew Mfg. Co.; built new weave shed of 150 looms, new yarn storehouse, 175 by 200 ft., 2 stories high, and new bleach house, 70 by 140 ft.

Chicopee. Dwight Mfg. Co.; old No. 2 mill torn down and replaced with modern building.

Easthampton. Glendale Elastic Fabrics Co.; capital increased by issue of $197,700 new stock and business of Nashawannuck Mfg. Co. taken over; now installing 88 motors for electric drive.

Fall River. Fall River Iron Works Co.; installed 1,050 new automatic looms to replace old narrow looms.

Fisherville. Fisher Mfg. Co.; installed 300 new fancy looms; equipped carding and spinning departments in new addition.

Stoughton. Wood, J. W., Elastic Web Co.; built 1-story addition, 60 by 80 ft., for weaving dept.

West Warren. Warren Cotton Mills; completing large new weave shed; equipping with electric motors and humidifying and air-cleaning systems.

NORTH CAROLINA.

East Durham. Durham Cotton Mfg. Co.; built new dye house, 78 by 132 ft., and installed 1,400 additional spindles.

Gastonia. Clara Mfg. Co.; built addition, 75 by 160 ft., and installed 3,700 spindles and accompanying machinery.

Gastonia. Ozark Cotton Mills; building 3-story addition, 100 by 75 ft., to double capacity; 10,000 spindles to be added.

Greensboro. Pomona Mills, Inc.; added 5,000 spindles and accompanying equipment.

High Point. Pickett Cotton Mills; installed two additional spinning frames and 12 automatic looms; considering increase to 30,000 spindles and 750 looms.

Huntersville. Anchor Mills; built additions, 150 by 75 ft. and 50 by 25 ft. and installed 5,000 spindles.

Kinston. Caswell Cotton Mills, Inc.; built 100-ft., 2-story extension to mill and installed 5,400 spindles, doubling capacity.

Lawndale. Cleveland Mill & Power Co.; built new dye house, 180 by 35 ft.; also extension to mill, 60 by 40 ft. and addition 40 by 50 ft. for twisting and winding.

Lexington. Dacotah Cotton Mills; 3-story addition under construction, to be equipped with 4,800 spindles and 150 looms.

Kannapolis. Cannon Mfg. Co.; built 120-ft. addition to weave room.

Roanoke Rapids. Roanoke Mills; added 4 napping machines and 256 new automatic looms.

Salisbury. Salisbury Cotton Mills; built 2-story brick addition; new machinery equipment to be installed.

Selma. Ethel Cotton Mills; expending $70,000 for new equipment, including 3,000 spindles.

Swepsonville. Virginia Cotton Mills; installed 570 motors and other equipment for individual electric drive.

PENNSYLVANIA.

Philadelphia. Baxter, Kelly & Faust, Inc.; plans prepared for new mill building, 195 by 60 ft., 4 stories, brick construction, to be equipped with sprinkler system and electric power.

Philadelphia. Lindley Mfg. Co.; Indiana Ave. and A St.; installed 12 broad looms for manufacture of cotton bed spreads.

Clifton Heights. Kershaw, Nelson; built new 3-story weaving mill, 50 by 150 ft.

Reading. Narrow Fabric Co.; erected new steel and concrete factory building, 4 stories high.

RHODE ISLAND.

Georgiaville. Bernon Mills; installed 6,000 additional spindles.

Hope Valley. Taylor, J. J. & Co.; built addition 54 by 54 ft., and installed 26 new looms.

Pawtucket. Hope Webbing Co.; three enlargements erected, one of three stories, 172 by 42 ft., an ell, 99 by 42 ft., and a power house, 44 by 80.

SOUTH CAROLINA.

Anderson. Conneross Yarn Mill; built 2-story addition, 50 by 100 ft., and started new cotton waste dept.

Anderson. Cox Mfg. Co.; plant purchased by Wellington, Sears & Co., Boston, and being reequipped to manufacture duck at cost of $200,000, according to report.

Chester. Eureka Cotton Mills; built addition, 125 by 40 ft., and added 2,560 spindles and 100 looms, new equipment.

Columbia. Southern Aseptic Laboratories; rebuilt burned plant, with increased space and machinery.

Greenville. Woodside Cotton Mills; completed installation of 27,000 additional spindles and 678 looms, with large amount of electric power equipment.

Greenville. Camperdown Mills, built 1-story brick addition, 105 by 28 ft., and installed 40 new looms.

Greenwood. Panola Cotton Mills; added 5,300 spindles and 125 automatic looms.

Lancaster. Lancaster Cotton Mills; capital increased from $1,000,000 to $2,500,000; large additions to plant, equipped with electric drive.

Pacolet. Pacolet Mfg. Co.; added 6,592 spindles and accompanying machinery.

Piedmont. Piedmont Mfg. Co.; built new cloth room, 70 by 177 ft.; replaced old equipment with new machinery and installed 1,200 h. p. turbine and electric drive equipment.

Yorkville. Cannon & Co.; built addition, 75 by 300 ft.; installed 200 new looms and changed from steam to electric power. (Formerly York Cotton Mills.)

TENNESSEE.

Knoxville. Brookside Mills; capital increased from $900,000 to $1,200,000; added 15,000 spindles and 550 looms.

WISCONSIN.

Baraboo. McArthur, Geo. & Sons; building new concrete mill, 80 by 40 ft.

WOOLEN.

CONNECTICUT.

Bridgeport. Salt's Textile Mfg. Co.; built new 3-story mill, new 1-story weave shed, new dye house and power house, all of brick, steel and concrete construction.

Coscob. Mianus Mfg. Co.; built 4-story addition, 40 by 60 ft. and added 2 sets and 12 broad looms.
Mystic. Mystic Woolen Co.; erected modern brick building for wet finishing and dyeing departments and installed additional looms.
Rockville. Regan, Jas. J., Mfg. Co.; built 2-story brick addition, 70 by 100 ft. (Purchased Saxony Mill of Hockanum Co.)
Stafford. Phoenix Woolen Co.; built 50-foot addition full size of main mill; added looms.

INDIANA.

La Porte. La Porte Woolen Mills; erected new building, 50 by 65 ft., for power plant; increased capacity of yarn dept. 25 per cent.

MASSACHUSETTS.

Caryville. Taft Woolen Co.; built addition to carding department and installed electric drive equipment.
Clinton. Bigelow Carpet Co.; building new 3-story brick mill, 133 by 77 ft., to replace old wool house, to be equipped largely with new machinery.
Franklin. Franklin Yarn Co.; built brick addition, 110 by 70 ft., for card room.
Haverhill. Emmons Bros. Co.; added 7 sets of cards.
Holliston. Darling Woolen Mill Co.; built 40-foot addition and installed 8 new looms.
Medway. Fabyan Woolen Co.; building 3-story brick mill, 83 by 53 ft., to increase weaving dept., 14 looms to be added.
Mendon. Whiting, Geo. R.; Mendon Woolen Mills; built and equipped new plant to replace one burned.
Rochdale. Clark, J. D., Co.; built 1-story addition, 29 by 36 ft., and installed 8 additional looms.
Webster. Slater, S. & Sons; built additions and increased equipment.

MICHIGAN.

Clinton. Clinton Woolen Mfg. Co.; added 1 set cards, 576 spindles and 5 looms.

NEW HAMPSHIRE.

Franklin. Franklin Mills; added another story to No. 2 Mill, 122 by 44 ft., increased space to be used for dry finishing.
Guild. Granite State Mills; built new weave shed, 110 by 33 ft., and installed 24 looms, equipped with individual motors.
Tilton. Carter, A. D.; built 3-story addition and added 10 looms to equipment.
Tilton. Tilton Mills; built addition and ordered 40 additional looms.

NEW YORK.

Amsterdam. Sanford, Stephen & Sons, Inc.; made extensive improvements, including 5-story building for dyeing dept.
Amsterdam. McCleary, Wallin & Crouse, Inc.; capital increased from $2,000,000 to $4,000,000 to provide for 50 per cent. increase in production.

OREGON.

Eugene. Eugene Woolen Mill; installed new wool washing and drying equipment.
Portland. Portland Woolen Mills; built brick and concrete mill, 200 by 80 ft., doubling capacity.

PENNSYLVANIA.

Philadelphia. Alva Carpet & Rug Co.; built 2-story addition, 65 by 100 ft.
Philadelphia. Baker, A. T. & Co.; plans prepared for new 4-story reinforced concrete building, 70 by 200 ft., on Main St., Manayunk
Philadelphia. Cambridge Worsted Co.; increased space and added 10 new looms.
Philadelphia. Delaine Mills, Inc.; installed 26 new looms and new finishing equipment.
Philadelphia. Masland, C. H. & Sons; built 5-story-and-basement addition, 65 by 100 ft.
Philadelphia. Superior Textile Mills, Inc.; installed 10 new broad looms for making astrachans and department for custom burling and mending.
Bloomsburg. Magee Carpet Co.; installed 40 looms in new weaving dept.
Honesdale. Birdsall Bros.; built 2-story additions, 21 by 40 ft., and installed 10 new looms.
Lenni Mills. Yorkshire Worsted Mills; built brick addition, 52 by 100 ft., for weaving and finishing.
Reading. Leinbach, J. G., Co.; added 3 sets cards and 40 looms; steam power plant reequipped and enlarged.

RHODE ISLAND.

Bristol. Cranston Worsted Mills; built brick addition, 46 by 65 ft., 4 stories high.
Harrisville. Stillwater Worsted Co.; built 2-story brick addition, 100 by 60 ft.
Woonsocket. Samoset Worsted Mills; building addition, 88 by 115 ft., and will install 2,400 additional spindles.
Woonsocket. Guerin Spinning Co.; built frame addition, 72 by 156 ft., one and two stories.

VERMONT.

Bennington. Holden-Leonard Co.; built addition to finishing dept., 72 by 52 ft.

VIRGINIA.

Bedford City. Bedford Mills Co.; built addition and installed 4 new sets of cards and 4 mules.

WEST VIRGINIA.

Barnesville. Barnesville Mfg. Co.; built brick and concrete addition, 300 by 65 ft., and added 2 sets and 8 looms.

WISCONSIN.

Chippewa Falls. Chippewa Falls Woolen Mill; built 3-story and basement addition, 35 by 60 ft., for dyeing and scouring.
West Bend. West Bend Woolen Mills; added equipment to increase capacity 100 per cent.

CANADA.

Ontario, Almonte. Thoburn, William; additions to plant include 2 sets and 7 looms.
Ontario, Chatham. Taylor, T. H., Co.; built addition 76 by 50 ft., and added 11 looms.

KNIT.

CALIFORNIA.

San Francisco. Gantner & Mattern Co.; built new 5-story reinforced concrete factory building at Mission and 10th Sts., containing 80,000 ft. of floor space and increasing capacity 100 per cent.

GEORGIA.

Barnesville. Collier Mfg. Co.; doubled capacity of knitting, bleaching and finishing departments and installed electric power equipment; built 2-story addition, 150 by 50 ft.
Lafayette. Walker County Hosiery Mills; installed 115 additional knitting machines.
Rome. Rome Hosiery Mills; built brick addition, 64 by 120 ft., 2 stories high, to be equipped with 100 knitting machines; dyeing and finishing departments increased.

ILLINOIS.

Champaign. Textile Mfg. Co.; built new mill, 2 stories, 210 by 50 ft., to take place of plant burned.
Rockford. Burson Knitting Co.; built 4-story modern mill to replace old building.

IOWA.

Atlantic. Atlantic Knitting Co.; built addition and installed 6 new knitting machines, 2 automatic sleevers and 2 body machines.

MASSACHUSETTS.

Chicopee Falls. Taylor, Bramley Co.; erected new 4-story building, 75 by 30 ft., and equipped with new knitting and other machinery.
Lowell. Ipswich Mills; taken over hosiery department of Middlesex Co. and installed 125 additional machines.

MICHIGAN.

Adrian. Adrian Knitting Co.; additions to plant consisting of three buildings, 48 by 80 ft., 29 by 50 ft. and 54 by 111 ft.

MINNESOTA.

Minneapolis. Northwestern Knitting Co.; capital increased to $3,000,000 and extensive additions to plant made.

NEW HAMPSHIRE.

Laconia. Pitman Mfg. Co.; built addition and installed 20 new knitting machines.

NEW JERSEY.

Beverly. Beverly Underwear Co.; built addition and installed equipment doubling capacity.
Vineland. Karl, John; added 70 knitting machines to equipment.

NEW YORK.

Broadalbin. Broadalbin Knitting Co.; building addition, 60 by 70 ft., 3 stories high; 3 sets of cards and knitting machines to be added to increase production 50 per cent.

Brooklyn. Kayser, Julius & Co.; built new 7-story concrete mill, 110 by 268 ft.

Clinton. Clinton Knitting Co.; built addition and installed 6 new knitting frames.

Greenwich. Palmer, Jesse V., Co.; extensive improvements to plant include erection of new bleach house.

New Hartford. Olympian Knit Goods Co.; building addition, 154 by 50 ft., 4 stories high, also new boiler and engine house, 35 by 47 ft., to be completed before Jan. 1.

Valatie. Adhesive Gimp Mfg. Co.; added 10 knitting machines, equipped new finishing room and capacity increased to 200 doz. sweater coats per day.

Watertown. Shaughnessy Knitting Co.; added new knitting machines and largely increased output.

NORTH CAROLINA.

Burlington. Whitehead Hosiery Mills, Inc.; capital increased to $100,000; built new 3-story mill, 160 by 50 ft., and equipped with 200 knitting machines, 45 ribbers and 35 loopers.

Durham. Durham Hosiery Mills No. 2; built new mill, 203 by 100 ft., also smaller addition, 80 by 40 ft., doubling capacity, 200 machines added.

High Point. Piedmont Mills Co.; erecting building for hosiery mill with capacity of 1,000 doz. per day.

Statesville. Bradford Knitting Mill, Inc.; added 50 new knitting machines and installed electric drive to replace steam power plant.

OHIO.

Bowling Green. Monarch Underwear Co.; capital increased to $50,000; built new warehouse and installed new knitting and sewing machines.

Cleveland. Fashion Knitting Co.; capital increased from $10,000 to $50,000 and additional machinery installed.

Piqua. Piqua Hosiery Co.; capital increased from $75,000 to $150,000; added 10 new knitting and 22 new sewing machines.

Toledo. Dolphin Hosiery Co.; occupying new quarters; capital increased to $75,000; added 35 knitting machines and dyeing and finishing machinery.

PENNSYLVANIA.

Philadelphia. Allen Knitting Mills Co.; 11th and Westmoreland Sts.; new address; added machinery to double production.

Philadelphia. Miller & Sons Co.; built 2-story addition, 100 by 156 ft., also dye house, 50 by 56 ft.

Philadelphia. Rosenau & Loeb; installed 30 new knitting machines; planning to establish branch in Frankford.

Boyertown. Crescent Knitting Mills; built addition, 32 by 60 ft., and increased equipment.

Grill. Grill Hosiery Mills; added 20 knitting machines and installed new dyeing equipment.

Harrisburg. Moorhead Knitting Co.; Cameron and Walnut Sts.; capital increased to $100,000 and new mill erected, 4 stories, 50 by 140 ft.

Honesdale. American Knitting Co.; built 3-story brick addition, 75 by 125 ft., increasing production 50 per cent.

Pittston. Alpine Knitting Mills; built addition, 70 by 58 ft., increasing production to 500 doz. daily.

Quakertown. Quakertown Knitting Mills Co.; installed 21 new knitting machines and piece dyeing equipment.

Reading. Leininger & Eberly; Oakbrook Hosiery Co.; built new brick mill to replace burned plant, doubling capacity.

Reamstown. Hope Hosiery Co.; building new 3-story brick mill, 28 by 78 ft.; will install electric power equipment and about 35 new knitting machines.

York. Acme Hosiery Co.; built 2-story brick mill, 36 by 100 ft.

RHODE ISLAND.

Pawtucket. Lumb Knitting Co.; built addition, 100 by 100 ft.

Pawtucket. Pawtucket Hosiery Co.; built new brick mill, 100 by 100 ft., and increased equipment to 180 knitting machines.

Providence. Roseknit Hosiery Co., Inc.; incorporated with capital of $30,000; James Dunlop, Jr., pres.; Frank L. Rosenfeld, treas. and buyer; increasing equipment to give production of 1,000 doz. per week.

TENNESSEE.

Clinton. Magnet Knitting Mills; increased capital to $75,000 and added 25 new knitting machines.

Knoxville. Knoxville Knitting Mills Co.; capital increased from $100,000 to $300,000 and new bleach house erected with larger capacity than one burned.

WEST VIRGINIA.

Martinsburg. Interwoven Mills, Inc.; built brick addition to dye house, increasing dept. 50 per cent., also 4-story building, 56 by 136 ft., for storage and packing.

WISCONSIN.

Kenosha. Kenosha Knitting Co.; capital increased to $30,000; built 3-story brick mill, 36 by 100 ft., doubling capacity.

Merrill. Merrill Knitting Co.; capital increased to $30,000; built 3-story brick mill, 40 by 75 ft.

Milwaukee. Van Dyke Knitting Co.; building new 4-story mill, 100 by 150 ft., to cost $60,000 and double capacity.

CANADA.

Ontario, Amherstburg. Hamilton & Lewitt Knitting Co., Ltd.; built 3-story addition, doubling capacity, and took over equipment operated by Hall-Hatch Knitting Co. on wool socks.

Quebec, Montreal. Dominion Cord & Tassel Co.; 505 St. Paul St.; Automobile Scarfs; 6 sewing machines. (New dept.)

Quebec, Shawinigan Falls. Shawinigan Knitting Co., Ltd.; capital increased to $200,000 and 11 knitting and 22 sewing machines added.

Ontario, Toronto. Reliance Knitting Co., Ltd., makers of sweaters and fancy knit goods; installed dept. for manufacture of men's two-piece and union underwear.

MISCELLANEOUS.

MASSACHUSETTS.

Lowell. Lowell Bleachery; building $20,000 brick and concrete addition.

Ludlow. Ludlow Mfg. Associates; built new 5-story mill, also 6-story structure connecting Mills 10 and 11; contract let for new storehouse to cost $100,000; additions made to steam power plant.

Webster. Stevens Linen Works; built 2-story brick addition, 70 by 290 ft.; installed new automatic looms and electric drive equipment.

MINNESOTA.

Duluth. Western Rug Co.; building new plant, two buildings, 146 by 86 ft. and 146 by 60 ft., one and three stories, of concrete construction.

Minneapolis. Crex Carpet Co.; building $1,000,000 group of concrete buildings, including 5-story factory 75 by 500 ft., two warehouses 102 by 512 ft., machine shop 100 by 100 ft., and power plant 50 by 125 ft.

MISSOURI.

St. Louis. Lowell Bleachery; capacity of experimental plant increased to 60,000 lbs. per week; may build on land purchased.

NEW YORK.

Niagara Falls. Niagara Falls Linen Co.; built addition to be equipped with 100 additional looms.

PENNSYLVANIA.

Philadelphia. Heilwig Silk Dyeing Co.; building new $250,000 plant at Milner, Howell and Homestead Sts. and Delaware River.

Marcus Hook. American Viscose Co.; plans prepared for three new buildings, one 135 by 423 ft., two stories and basement, one 78 by 152 ft., five stories high, and one 117 by 173.

RHODE ISLAND.

Apponaug. Apponaug Co.; $800,000; Edw. C. Dubois, pres.; Wm. O. Gay, treas.; Alfred L. Lustig, gen. mgr.; Wm. P. Wright, res. mgr.; company reorganized and machinery for handling new lines installed.

Phillipsdale. Glenlyon Dye Works; built addition, 100 by 40 ft., one and two stories, of heavy steel and brick construction.

Correspondence and Notes

UPON TEXTILE TOPICS AT HOME AND ABROAD

ARTIFICIAL SILK IN THE FORM OF LOOSE FIBERS

BY ROBERT DANTZER

Translated from the French by the Editor of the Textile World Record

Artificial silk has been manufactured almost wholly in the form of continuous filaments, which have been doubled to obtain a thread of the desired size or weight, this being similar to the process of reeling and doubling natural silk. In recent years attempts have been made to produce the cellulose filaments in short lengths so as to make it possible to manufacture yarn from the material by the methods ordinarily adopted in the spinning of wool, cotton and flax, which are carded, drawn and spun. Artificial silk in the loose form can also be mixed with other textile materials to produce various effects in construction and design. There are a number of different processes of manufacturing yarn from cellulose in the loose form, the idea having evidently originated with R. L'Huilier and L. Maurice (French patent 405,684, of Aug. 3, 1909 and addition Jan. 10, 1910).

The system devised by A. Bloch (French patent 447,069, Oct. 17, 1911) is a typical method of the manufacture of artificial cotton. The operation is as follows:

1. The cellulose is immersed in a slightly alkaline bath in order to remove the fatty material. The excess of water is removed by a hydro-extractor.

2. The cellulose is next bleached in a solution made up of 2 parts of chloride of lime to 1,000 parts of water. The material is then passed through a weak solution of carbonate of soda or potash. In order to avoid the presence of chloride of lime in the cellulose, the solution used for the first operation can be replaced with the following:

10 parts chloride of lime,
6 parts sulphate of alumina,
⅔ parts sulphate of magnesia,
200 parts water.

The hypochlorite thus obtained is very unstable and gives up the chlorine very easily, resulting in a rapid and perfect bleaching.

3. The cellulose is washed in running water and then hydroextracted.

4. The cellulose is dissolved in a Schweitzer reagent in the usual manner. This reagent is made in the ordinary manner, or better by passing the ammonia over copper in contact with air.

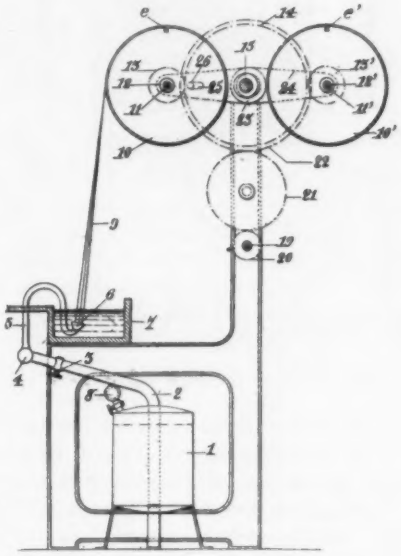


FIG. 1

5. The solution of cellulose is run through a pressure filter. This is the ordinary filtering process, adding one part of castor oil to 1,000 parts of the solution.

6. The cellulose coming from the filter falls into the hydro-extractor, having a basket which is perforated with an immense number of very small holes through which the solution escapes by centrifugal force in the form of a filament. These filaments fall in a precipitating liquor consisting of water and sulphuric acid. The interior walls of this precipitating tank are covered with a

kind of card clothing with plated wire. This clothing can be removed at will. The metallic points retain the fibers and prevent them from falling to the bottom of the tank and becoming agglutinated.

The process (French patent 438,131, March 6, 1911) invented by P. Girard, differs completely from the preceding and is applicable to all kinds of artificial filaments obtained by pressure. The continuous artificial

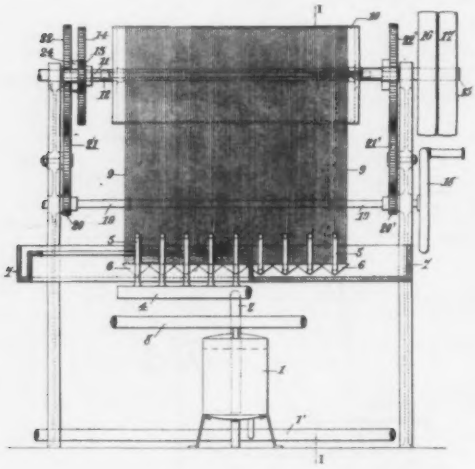


FIG. 2

filaments as they come from the machine and the coagulating baths are wound in groups on bobbins, whose diameter varies with the length of fiber desired. When a sufficient quantity of the yarn is wound it is cut from the bobbins. This produces a mass of loose fibers varying uniformly in length according to the increase in the size of the bobbins. The machine used for the Girard process is illustrated at Figs. 1, 2 and 5.

The solution of viscose which is to form the filament is stored in the tank, 1, and connected by the pipe, 2, and valve, 3, to a distributor, 4, which fits the conduits, 5, and the various filieres, 6, which are placed in the coagulating bath, 7. The pressure for forcing the viscose solution from the reservoir, 1, to the filieres, 6, is supplied by compressed air in the container, 8. The continuous filaments coming from the filieres, 6, are formed in groups, 9, the number of filaments in each group being as large as possible. On the other hand, it is an advantage to make the filament as fine as possible. This is one of the special characteristics of this process, the filaments not being heavier than two deniers.

The filaments in groups are wound on the large spool, 10, which is operated in combination with another spool, 10′, to accelerate the work, one being substituted for the other when necessary. The number of pairs of spools on one machine depends on the special requirements of each case. These spools are mounted on the shafts, 11 and 11′, which are connected with a sprocket chain, 24. The power is obtained from the shaft, 15, and transmitted by the gears, 13, 13′ and 14. Both the spools are driven by the same gear so that a full spool can easily be replaced with an empty spool. Power is transmitted to the shaft, 15, by the chain of gears as shown.

FIG. 3

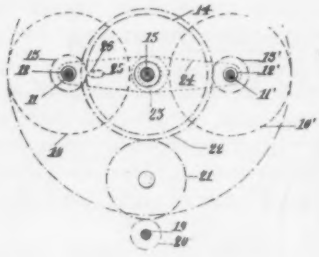


FIG. 4

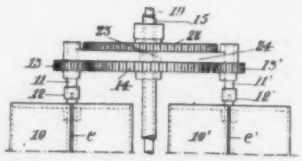


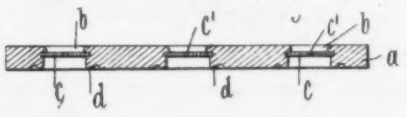
FIG. 5

The next operation is to cut the filaments from the spools. The spools, 10 and 10′, Fig. 5, are made with a slit, e and e′, which permits the introduction of a blade which cuts the filaments. The filieres ordinarily used are made of glass, which, as is well known, wear quite rapidly with the result that the apertures grow larger.

Fig. 2 is a front view of the machine shown in section at Fig. 1. Figs. 3 and 4 are side and end views respectively of the chain of gears.

Glass filieres will not stand over 15 days of continuous service because of the mechanical friction and the action of the alkaline solution. Gold and platinum have been used for the filieres, which are usually 5/8 inch thick. Owing to the cost of the solutions, very high pressures have been used and under these conditions the metallic filieres do not meet the requirements. The filiere invented by P. Girard and C. Buffard (French patent 442,783, April 20, 1912) is designed to overcome this difficulty. It con-

FIG 6



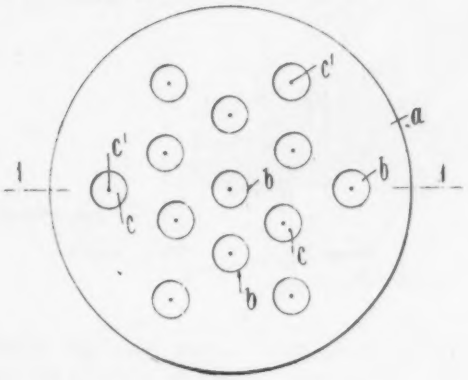


FIG. 7

sists of a support, a, Fig. 6, which is not affected by acids. The metallic plates of gold or platinum are inserted at b. These plates are pierced with a capillary hole, c', and are fixed firmly in the supports. The support, a, Figs. 6 and 7, correspond to 6, Figs. 1 and 2, the illustrations showing clearly the method of construction.

Attempts have been made to produce the artificial filament without pressure and in the open air, the viscose solution running by gravity and coagulating in the air. The process invented by G. Cahen (French patent 434,868, Dec. 8, 1910) is based on this principle and uses the following solution mixed at an ordinary temperature:

100 parts Collodion by weight,
20 parts Chloride of Alumina.
4 to 10 parts Formate of Soda,
6 parts Nitric Acid, 40° Be.,
40 to 80 parts Water.

The mixture is stirred vigorously for several hours until the mass is perfectly homogeneous and sufficiently fluid to run like a thick oil. It is left standing for several hours and then filtered. This mixture is run into filaments without pressure, possessing this property by reason of the combined action of the formate of soda, chlorine of alumina and nitrate acid. The filaments are passed through a solution of sulphohydrate of ammonia.

DEPRESSION IN THE SCOTCH-TWEED INDUSTRY

By CONSUL RUFUS FLEMING, Edinburgh

The South Scotland tweed industry, which for two or three years has been very active, is now somewhat depressed. During the last three months orders have fallen off. At the annual meeting of the Manufacturers' Corporation, in Galashiels, on October 9, it was stated by the chairman that the depression was due in some measure to the waste of capital caused by the Balkan war and the mobilization of great masses of men by Austria and Russia, but that the principal cause of the loss of trade was the decree of fashion in favor of fine Saxony makes of cloth and against cheviots, thus giving worsted manufacturers an opportunity which they were strenuously improving, while tweed manufacturers were facing a winter of poor promise.

In regard to the probable effect upon the Scotch-tweed trade of the reduction of the American tariff on woolen goods (which will take effect on Jan. 1 next), there are differences of opinion. The new American tariff is at present considered by most mill owners an uncertain element in the situation, mainly on account of (1) the free-listing of wool, which, while lowering prices to American mills, may increase prices in this market; (2) the American preference, for the time being at least, for worsted goods; and (3) the competition of cheaper English and other European cloths.

THE WEAVING OF FILLING LENO

By J. T. B., Forsyth Dyeing Co.

For more than twenty years there have been to my knowledge in various textile journals in this country and abroad frequent

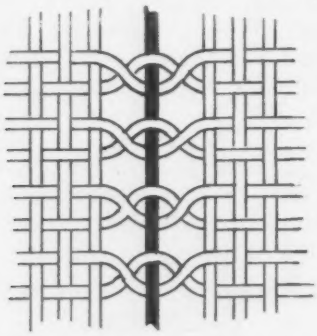


FIG. 1. THE SIMPLEST FORM OF FILLING LENO

inquiries for information regarding the methods employed for weaving filling lenos, such as are seen in certain kinds of scrims and curtains, and occasionally in imported towelings. This information no one seemed

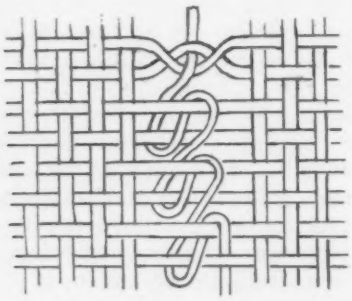


FIG. 2. SHOWING THE LAY OF THE BINDER THREAD

able or willing to impart. One reason is perhaps that many of the filling leno effects are not woven automatically, but are put in

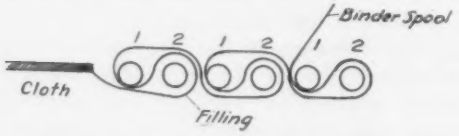


FIG 3. A SECTION OF THE BINDER THREAD

by hand, and come under the head of hand-drawn work. The lack of information obtainable as to the weaving methods of filling leno effects is due principally to the fact that no one has tried to produce this weave in any quantity, because it is the general conclusion that, outside of the interest usually taken in

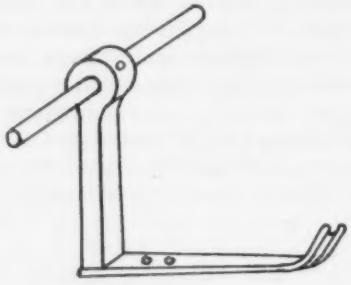


FIG. 4

novelties, the manufacturer of filling leno would have no better chance of selling his

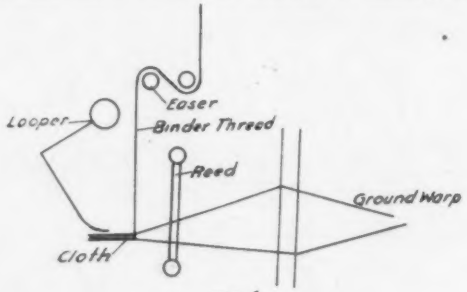


FIG. 6

product over the counter than he would have of disposing of any good warp leno of

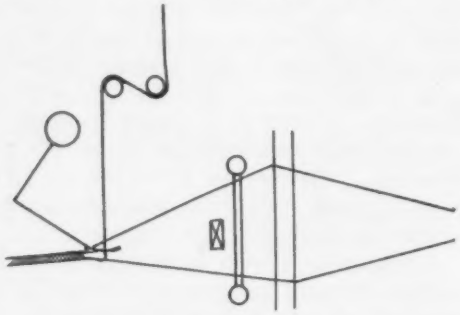


FIG 7

the same grade, and that the production of the filling leno is consequently not worth the effort. Many manufacturers and weavers have grown up with the idea that a filling leno is practically impossible and unprofitable, and a good thing to let alone.

Before allowing ourselves to concede that

anything is impossible simply because someone has said so, let us recall for a moment the story of Columbus and the egg. After a study of the accompanying sketches, it should be remembered that all things are not what they seem to be, and that a filling leno is not a filling leno until after it is woven. In other words, the crossing of the filling threads does not occur until after all the picks are in, and is then due to the tightening up of the binder threads.

Fig. 1 is a sketch of the simplest form of filling leno. Fig. 2 shows the lay of the binder thread, looking down from above the cloth, as it appears before being drawn tight. Fig. 3 shows a section of the same binder thread. After a careful study of Figs. 1, 2 and 3 there can be no question remaining except as to how the binder thread can be inserted during the process of weaving. If this can be done, we are well on our way toward the successful accomplishment of one kind of so-called filling leno.

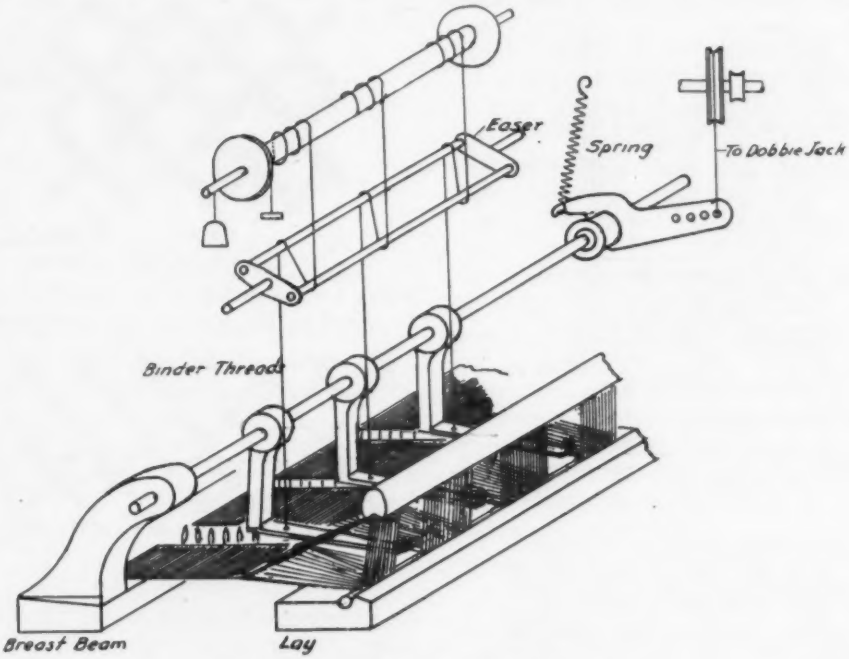


FIG. 5. THE DEVICE FOR WEAVING FILLING LENO

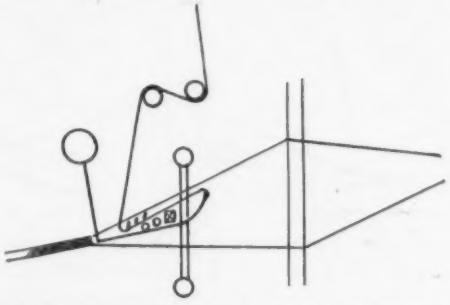


FIG. 8. SHOWING POSITION OF LOOPER AT FOURTH, FIFTH AND SIXTH PICKS

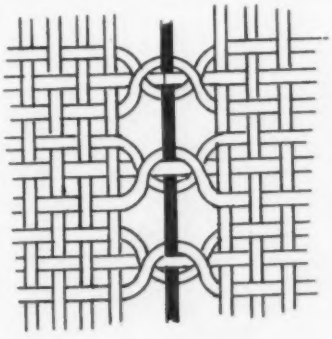


FIG. 9. A FILLING LENO

I will now consider the attachments required on a common power loom to insert a binder thread as shown in Figs. 2 and 3. Mounted in brackets fastened to the breast

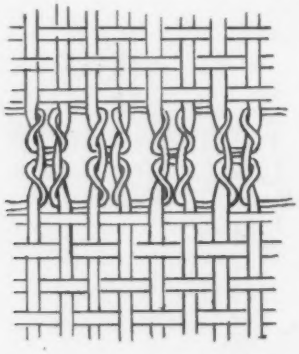


FIG. 10. A FILLING LENO

beam, 6 inches above and directly over the fell of the cloth, is a 7/8-inch shaft, on which brass castings are fastened at intervals. To the lower end of each of these are

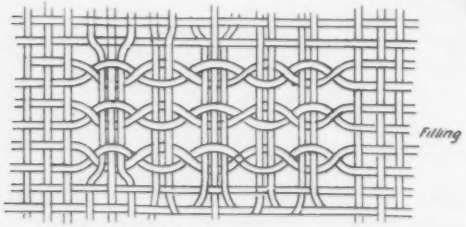


FIG. 11. A FILLING LENO

brazed or otherwise fastened strips of spring steel, 1/16 inch by 1/4 inch, bent to the proper form and forked at the end to en-

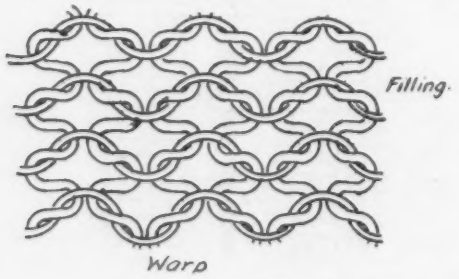


FIG. 12. A FILLING LENO

gage the binder thread. Fig. 4 illustrates the principle involved, but no attempt is made to show the exact form required. Fastened to the most convenient end of the shaft is a double end lever, to one end of which is fastened a spring; and to the other end a strap or cord, which passes over a

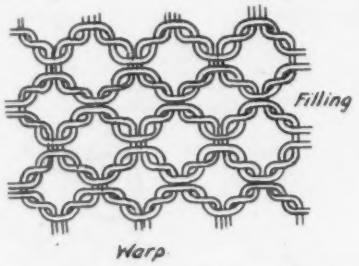


FIG 13. FILLING LENO NET EFFECT

pulley to the jacks of an open shed dobby. Mounted on the arch of the loom are brack-

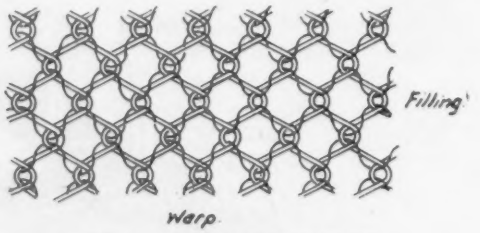


FIG. 14. FILLING LENO NET EFFECT

ets carrying a spool of binder yarn, and an easer similar to a trailer lappet. Fig. 5 shows this device and also the openings in

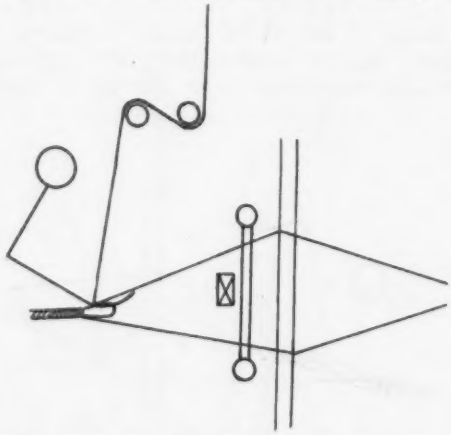


FIG. 15. SHOWING THE POSITION OF THE LOOPER AT THE SECOND PICK

the reed through which the loopers project.

In weaving the filling leno shown at Fig. 1, it makes no difference whether it is one pick crossing one or ten crossing ten, the motion is the same. The loopers must be

made to assume three different positions (which can be readily accomplished with an open shed dobby) all the way out, half way

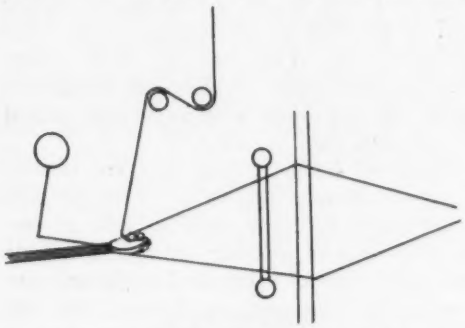


FIG. 16. SHOWING POSITION OF LOOPER AT THE THIRD PICK

in, and all the way in, as illustrated in Figs. 6, 7 and 8, the loom being fitted with a warp and attachments shown at Fig. 5. These three positions of the loopers will cause the insertion of a binder thread in any number of picks in a position similar to the con-

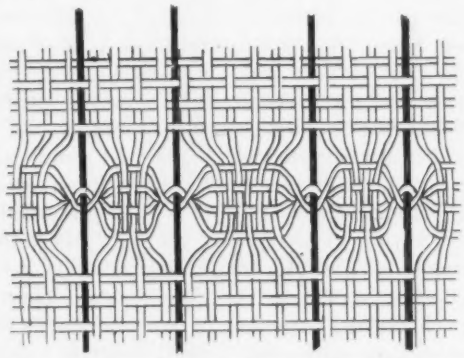


FIG. 17. SHOWING THE CROSSING OF PICKS IN A PLAIN WEAVE

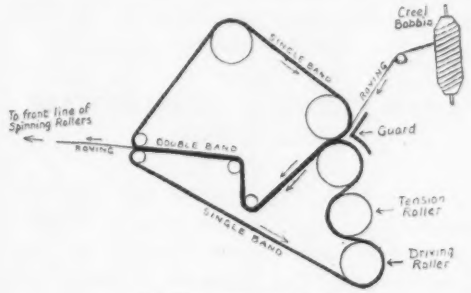
struction shown at Fig. 1. Fig. 15 shows the position of the looper at the second pick; Fig. 16, at the third pick; Fig. 8 at the fourth, fifth and sixth picks.

These sketches illustrate one of four ways of producing filling leno effects on a power loom. A loom fitted as shown at Fig. 5 is not more difficult to run than a trailer lappet, and if properly adjusted should weave at about 150 picks per minute with a 30-inch reed spacer.

Figs. 1, 9, 10 and 11 show filling leno effects in stripes and blocks, while Figs. 12, 13 and 14 illustrate the much doubted, but not impossible weave in net effects. It is in the latter class of work, especially such as is shown at Figs. 12 and 13, that the future of the filling leno undoubtedly lies. Many such intricate and interesting weaves are not only possible, but are entirely practicable. Fig. 17 shows the crossing of picks in a plain weave, using a colored thread as a binder which weaves into the plain cloth ten picks before and after crossing the filling and then floats until the next repeat. It is afterwards cut off by hand.

A NEW COTTON SPINNING DEVICE

There has been applied to a 48-spindle ring spinning machine at Sabadell, in Spain, a remarkable spinning attachment which may prove to be the most important improvement in spinning during recent years. On the small scale mentioned it is reported to have demonstrated that the intermediate and roving frames of a mill can be dispensed



A COTTON SPINNING DEVICE

with without disadvantage. The inventor is Senor Casablancas, a Catalonian, and the company working his patents is the Sociedad Anonima Patente Casablancas. About 400 spinners and other persons interested recently attended a demonstration of Senor Casablancas' apparatus, during which the 48-spindle ring spinner was spinning on one side 70s yarn from 1.00 hank slubbing of Egyptian cotton and on the other side 60s yarn from 1.36 hank slubbing of low American cotton. The draughts were, therefore, respectively 70 and about 45.

The mechanism is simple. Taking the whole machine, the differences entailed by the Casablancas arrangement are these. The back and intermediate lines of drawing rollers are absent, and instead of them there

are two endless leather bands, similar to those used in waste or woolen carding engines, running over guide rollers in such a way that they come into running contact with each other during part of their travel and carry the roving along between them from the creel bobbin to the front line of spinning rollers. From this point the operations proceed as usual. The arrangement is shown in the accompanying diagram.

With regard to the performance of the apparatus, it is stated that with a draft of 40 to 50 obtained in this novel way the resultant yarn is strong. With drafts above this it is said, on the authority of one spinner, to be weaker than yarn spun in the ordinary way. It is claimed that, if the sliver is unequal, the natural tendency of the apparatus is to make it more regular, the leather bands pressing more heavily on the thicker sections. It is said, but without any qualifying reference to the drafts employed, that there is a general increase in strength of 5 per cent. over yarn spun in the ordinary way.—The Manchester Guardian.

A NEW PROCESS OF WEAVING WARP PILE FABRICS

BY BOHAIN

I have read with interest the article in your October issue on the process of weaving velvets which is controlled by the Societe francaise du Nouveau Velours, and would like to make some comments suggested by investigations that I have made. The company in question controls the Girard and Clemencon patents and claims the exclusive right to weave with a "lost pick," which is used to form the pile. Vanoutryre & Co., of Roubaix, in their French patent 258,851 of Aug. 12, 1896, seem to have been the first to propose this method of weaving. They used a fixed warp of brass wire, which produces the same effect as the Girard blades. The great difficulty of removing this wire warp from the cloth caused the idea to be abandoned. Nevertheless it was taken up by M. Vincent Gaudonnet (French patent 380,118, July 25, 1907 and May 17, 1910). This operator solved the question of removing the wire and has been operating a number of looms fitted with his device.

The first patent by Girard, dated Feb. 1, 1911, is an exact reproduction of the earlier patents. His second patent was filed in France on Feb. 26, 1912, and relates to the form of the blades. The same is true of the Clemencon patent of Dec. 11, 1912. Since that time the Societe Rodier has obtained a patent for the same kind of goods, patent No. 453,849, Jan. 31, 1913.

This point being settled, we come now to an examination of the value of the process as compared with the methods now in use. The principles of weaving are specialized for different classes of velvets. Looms are constructed for the product desired, the silk looms differing from worsted looms just as different classes of velvet looms differ from each other. The Girard loom can be compared to the wire motion loom used for certain classes of upholstery goods and plush. In narrow widths the maximum speed of the wire motion loom is 100 picks per minute. The Girard loom can be run 130 picks per minute. It costs $120 to adapt an ordinary loom for the Girard system, making the total cost $220. A wire motion loom costs $300 and can be used only for weaving velvets, there being no advantage in weaving other classes of goods on the velvet loom.

The advantages of the Girard loom as compared with the wire motion loom may be summarized as follows: 1. High speed. 2. A saving of $80 in the cost. 3. Less floor space. 4. Built to weave both velvets and ordinary goods on the same loom. There are, however, a number of inconveniences in connection with the Girard system. Although running at a higher speed than the wire motion loom the Girard loom has a smaller production. The blades, which are only 7/1000 inch thick, break frequently and cause loss of time. The shuttle wears the blades rapidly and the lay also wears out quickly, unless the precaution is taken to protect it with a thick covering of wool plush which has to be replaced frequently. It is also necessary to guard against the flying out of the shuttle when passing over the blades. There is great difficulty in "picking-out" for the purpose of repairing a defect in the cloth. Moreover when the cloth is woven it is necessary to shear it in order to

cut the tops of the loops and produce the pile, thus causing a waste of material. There is, moreover, the increased waste resulting from the lost picks which must be removed by hand at extra expense. The company claims that the removal of the lost picks costs only a few centimes per meter, but the post picks are drawn tight against the selvage and must be cut carefully so as not to damage the goods.

The operation of the blades requires two extra harness close to the reed which cause difficulty in mending broken threads. Moreover, the pile warp must be woven under slight tension. The system has the advantage of enabling pile fabrics to be woven on an ordinary loom, but it cannot be compared with the regular wire motion loom for the economical production of cloth. It is not possible to weave silk or mohair goods with the new system on account of the low tension under which the pile warp is woven. With material as expensive as silk or mohair this would cause too high a cost. The Girard looms are running at Bohain and Roubaix. There are none in the velvet district of Lyons and Amiens.

A HAND BOOK OF WEAVES

By G. H. Oelsner, Director of the Weaving School at Werdau.
Translated and Revised by Samuel S. Dale

This Series began in July, 1911

DOUBLE CLOTHS

A double cloth consists of two distinct fabrics, face and back, which are generally stitched together by interlacing the face threads with the back threads. The various applications of double cloth construction are as follows:

FIG. 1357

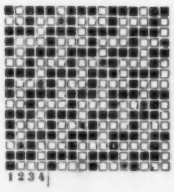


FIG. 1358

FIG. 1359

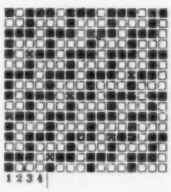


FIG 1360

FIG. 1361

FIG. 1362

1. Hollow fabrics, such as lamp wicking, fire hose, seamless bags, woven felt for covering pipes, etc. The face and back are joined at both sides, forming a tubular fabric.

2. To increase the weight and thickness of a cloth. Often the face does not permit the addition of a back filling only, in which case a separate set of warp threads for the back must be added to carry the back filling.

3. To make the fabric thicker and heavier than is possible with back filling alone. It is evident that in double cloth, the warp threads being divided into two parts, a much

(Copyright, 1913, by Samuel S. Dale.)

smaller number of threads is woven in one texture than is the case with back filling cloths, in which all the warp threads are woven together. The more open the set of the warp, the more easily will it receive the filling, and thus the thicker and heavier can the cloth be made.

4. For the better production of plaids and checks in both light and heavy goods. If such patterns are made in filling back fabrics the set of the filling is likely to be too coarse, as it is difficult to insert as many face picks per inch in a filling back cloth as in a cloth without back filling. The result of the more open filling set is that each square of the weave represents a space which in the cloth itself is longer than it is wide. The chief defect of such a texture is that the warp colors are more prominent than the filling. This is due to the more open set of the filling, which leaves the warp threads more exposed. This difficulty may be relieved by laying the warp with more open set, using finer yarn for the back filling and inserting more picks.

5. Cloths are also made double that the cost may not increase in proportion to the increase in the weight and thickness. Double textures not only permit of a closer set of the filling, but offer the advantage that in both warp and filling the backing yarn can be made of much cheaper material than that used for the face. This is especially true of the back filling yarn which in double cloths is often very coarse and made of exceedingly low stock. Such yarn, if used for the backing of regular back filling cloths, would be likely to show through on

FIG. 1349 FIG. 1350 FIG. 1351 FIG. 1352

FIG. 1353 FIG. 1354 FIG. 1355 FIG. 1356

FIG. 1363 FIG. 1364 FIG. 1365

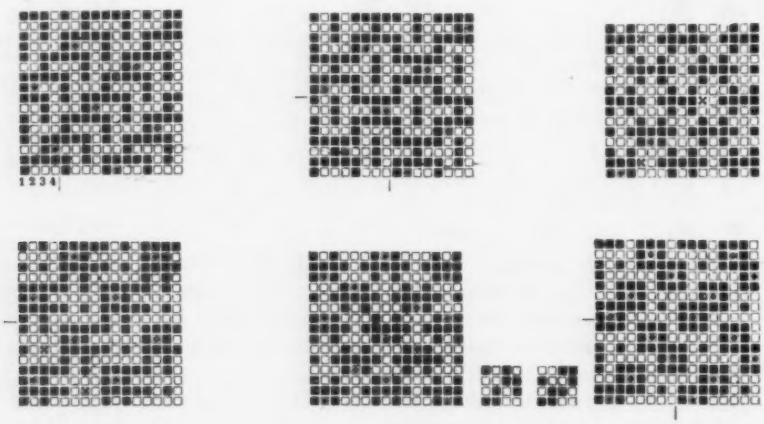


FIG. 1366 FIG. 1367 FIG. 1368-1369 FIG 1370

the face. Moreover the large size of the backing would make it impossible to drive the required number of picks into the fabric.

6. Cloth with face and back of contrasting colors, such as plaid back overcoating. The set and weave of the face of a double cloth are usually made to conform somewhat to those of the back. This, however, is not essential; both set and weave of the back may be entirely different from those on the face. This is not to be understood as permitting the use of any and every possible combination of diverse weaves for back and face, as the shrinking or fulling properties of the different weaves in combination must be considered. Judgment must be used on this point as no fixed rules can be laid down.

The face and back threads in both warp and filling are arranged so that one back thread comes after one, two, three or four face threads. Following are some practical combinations:

Face Weave	Back Weave	Set
Plain	Plain	1 face 1 back
Plain	Plain	2 face 1 back
Plain	Twill 2 up 2 down	1 face 1 back
Plain	Basket 2 up 2 down	1 face 1 back
Basket 2 up 2 down	Basket 2 up 2 down	1 face 1 back
Basket 2 up 2 down	Plain	2 face 1 back
Basket 3 up 3 down	Plain	2 face 1 back
Basket 3 up 3 down	Plain	3 face 1 back
Twill 2 up 1 down	Plain	2 face 1 back
Twill 2 up 2 down	Plain	2 face 1 back
Twill 2 up 2 down	Twill 2 up 2 down	1 face 1 back
Twill 2 up 2 down	Twill 3 up 1 down	1 face 1 back
Twill 2 up 2 down	Broken twill 3 up 1 down	1 face 1 back
Broken twill 3 up 1 down	Broken twill 3 up 1 down	2 face 1 back
Broken twill 3 up 1 down	Plain	2 face 1 back
Satin 5-leaf	Satin 5-leaf	2 face 1 back
Twill 3 up 3 down	Plain	3 face 1 back
Twill 3 up 3 down	Plain	2 face 1 back
Twill 3 up 3 down	Twill 2 up 1 down	2 face 1 back
Tricot long	Plain	4 face 1 back

The set of face and back in the warp may be different from that in the filling. For example, the warp may be set 1 face 1 back and the filling 2 face 1 back, or the warp may be set 3 or 4 face 1 back, and the filling 2 face 1 back. The object of such variations is to increase the proportion of filling in the goods, on account of the lower cost of the filling, and to obtain a better cover on the back.

Weaves for double cloths are drafted as follows:

1. The spaces for the back threads are indicated by the diagonal lines, Figs. 1341 and 1342, in which the set is 1 face 1 back and 2 face 1 back respectively. This is to distinguish the back threads from the face, and serves no other purpose.

2. The face weave is next drafted with black squares indicating warp risers, and blank squares for warp sinkers. For example, Fig. 1343 shows a plain weave on Fig. 1341; Fig. 1344, a 2 up 2 down twill on Fig. 1342.

3. All face warp threads are now raised above the back picks. This is shown by Fig. 1345 for Fig. 1343; by Fig. 1346 for Fig. 1344.

The weave intended for the back is drafted on the back warp and filling threads. The dotted squares indicate warp risers. Figs. 1347 and 1348 show a plain weave on the back of Figs. 1345 and 1346 respectively.

For cloths set 2 face 1 back, the draft is begun 1 face 1 back.

All double fabric weaves are drafted in the manner just described. It is evident that face and back each form separate textures, which may be of different colors.

TUBULAR FABRICS

Seamless sacks or tubular fabrics, such as lamp wicks, fire hose, bags, etc., are usually woven with a plain weave. The warp is made with an odd number of threads. For example, a warp for lamp wicking is made of 67 ends, of which 34 are for the upper and 33 for the lower fabric. This arrangement is necessary to prevent two adjacent threads at the edge from being woven alike.

The double plain weave is shown at Figs. 1347 and 1358, the picks being thrown alternately on face and back. Four threads are drawn in the outside dent of the reed; in each of the next two dents, 2 threads; and 3 threads in a dent for the rest of the warp. The more open set next to the edges is to counteract the tendency of the filling to contract more at the sides than in the center of the cloth.

Fire hose is often made of hemp yarn; warp, 3 ply; filling, 5-ply twisted slack. The warp is reeded 3 in a dent. The filling is set very close, causing a warp take-up of 20

to 25 per cent. The weave is shown at Fig. 1347.

Bags without seams at the bottom are woven with 2 back picks alternating with 2 face picks. The shuttle passes from right to left and return for 2 back picks; then from right to left and return for 2 face picks. In this way the right side is closed, forming the bottom, and the left side is open, forming the top or mouth of the bag. The weave is shown at Fig. 1349.

Each side of the bag is closed by weaving the entire warp (face and back) for a short distance into a single fabric with the weave shown at Fig. 1353. The projecting edges are turned inside the bag.

Seamless bags are frequently woven like fire hose. At the beginning the whole warp is woven single for a short distance, as just described, to close the bottom of the bag. The sides are woven seamless and the edges at the top are seamed after the bag comes from the loom.

Circular woven fabrics are sometimes made to cover cylindrical objects. In Europe the cylinders of rotary cloth presses are occasionally covered with a circular woven felt, which must be accurately made in order that the covered surface of the cylinder may be smooth. Usually they are woven with a 4-leaf twill, 2 up 2 down. In order that the twill may run in the same direction throughout the circumference of the tubular fabric, the twill of the upper weave is run in a direction opposite to that of the lower weave as both are viewed in the loom.

If this requirement is not observed the twill in one-half of the completed fabric will be to the left, that of the other half to the right. Fig. 1352 shows the draft to be used for this purpose; the upper twill is shown at Fig. 1350; the lower twill at Fig. 1351.

For very thick double felt the face and back are each woven with back filling, frequently with a broken 1 up 3 down twill, Fig. 1283. In such cases the order for the filling threads should first be determined. Two methods are available. The upper and lower picks of the face texture can be inserted in succession, and followed by the upper and lower picks of the back texture; or the two inner picks of the cloth (the lower pick of the face and upper pick of the back) can be woven first and then followed by the exterior picks of the cloth, upper pick of the face and lower pick of the back.

Figs. 1354, 1355 and 1356 show a broken 3 up 1 down back filling twill in the first named order, Fig. 1354 being the face, Fig. 1355 the back, and Fig. 1356 the complete double weave. In the woven tube the outside filling corresponds to the upper picks of the face, and the lower picks of the back weave.

REGULAR DOUBLE FABRICS

Double weaves are chiefly used, not for tubular goods, but to increase the weight and thickness of a fabric. For this purpose it is necessary that the two textures should be carefully and regularly stitched together, by interlacing the threads of one fabric with those of the other; in other words, either by raising the back warp above the face filling or by lowering the face warp below the back filling. Raising the back warp above the face filling is called stitching from back to face. Lowering the face warp below the back filling is called stitching from face to back.

The method of stitching has great influence on the appearance and handle of the cloth.

Following are the principal points to be observed:

1. Uniform distribution of the stitchers.

2. The right number of stitchers. General rules on this point are as follows: For 1 face 1 back weaves, 2 stitches are inserted in an area of 8 threads square; for 2 face 1 back, 2 stitchers in an area of 6 threads square; or 2, 4 or 8 stitchers in an area 12 threads square.

3. As far as possible stitch with each back warp thread, when stitching from back to face.

4. Insert, as far as possible, each stitcher where the stitching warp thread is above both the preceding and following picks; also where both warp threads next to the stitching thread are up so as to cover the back

stitcher. This rule refers to stitching from back to face.

5. Arrange the stitchers so as to disarrange the color pattern and weave as little as possible.

ENGLISH NOTES

By Our Regular English Correspondent

Bradford, Nov. 22, 1913.

The fact that two or three Boston wool dealers are opening offices in Bradford is accepted as a sign that business is meant. The incident has not escaped the notice of Bradfordians with American connections and the opening of new offices in America may be expected as a matter of course. The movement will perhaps do something to equalize buying upon American account. It has long and often been said that by spreading their purchases over a greater length of time American consumers might get the same amount of wool for appreciably less money than in buying by jerks. Apparently the proposition is undeniable. Time and again has the news that American buyers were here resulted in raising prices all round. The trade circumstances that compress American buying into short periods have doubtless still to be reckoned with, but according to the stories current on the Exchange, American buying is to be done in future upon a more thrifty plan than in the past. If this means that useful parcels are to be picked up whenever they look cheap the wool will certainly be bought for less. Tops to the value of about $2,000 figure in the monthly consular returns for October and the item is noteworthy as the first shipment of tops made from Bradford to the United States since 1902, when a sample lot was sent. It may be added that in that length of time about $150,000,000 of Bradford tops have been exported to other countries, mainly European.

* * *

There have been inquiries for many other kinds of English textiles than the chief sorts. One received from New York before the signing of the tariff was for made-up coffin linings. Horse blankets and wool finished blankets have been asked for from separate sources, as well as woolen gloves, sweaters and hosiery. Linen table cloths and towelling have also been sought. No very large business has materialized as yet, but a few orders for worsted serges are said to have been placed. The increases in exports to America from Bradford during October were most marked in cotton linings, silk yarn and silk noils, but it is not known that these are attributable directly to tariff reduction. A shipment of $2,500 of human hair possibly means that filter cloths are going to be made with this material. The hair employed in Yorkshire is brought from China and made into tops for the press-cloth, belting and canvas interlining trades.

* * *

A French material called "soie vegetale" which is being exploited in England is in experimental use by makers of furnishing fabrics. The fiber is derived from flax by a special process which improves the natural luster and it is spun, apparently, on worsted machinery, up to 70s cotton counts. The material bleaches to a good white and dyes like linen. The yarn is dearer and not so level as mercerized cotton, but it is understood to retain its luster better in use. It has the advantage of cheapness as compared with spun silk. Some interest has been displayed in the material by straw hat manufacturers, who may be supposed to see in it an alternative to ramie for making braid. Pile mats for bathrooms made from "soie vegetale" instead of from cotton look rich and have a good handle. The yarn has been tried by lace manufacturers without being largely adopted.

* * *

The suggestion has been thrown out to Lancashire spinners that they might do better to adopt night work than build new mills to meet the temporary needs of a boom. Both courses have their disadvantages, but those who have built most new mills of late years have not been men who have stayed to consider the general interests of the industry. Lancashrie operatives are quite unlikely to sanction the introduction of night work and if the union were brought to agreement there would remain the difficulty

of obtaining labor. As it is hard to get a sufficient number of young piecers for day work, it is not to be thought it would be readily possible to get them for night. Only a rough class of labor can be got in Bradford by the commission combers who run nights regularly throughout the busy season. In some small communities in Yorkshire the inefficient held that is procurable for emergency night shifts has proved itself very costly in damage to goods. The Colne Valley carded woolen mills have almost standardized the double shift system and although it is to be inferred that the mill books show some advantage in the arrangement there are plenty of doubters among experienced mill men. Some disposition to lessen night working by enlarging plants is seen in the woolen trade.

* * *

The sooty atmosphere of the English textile towns, which is in part the creation of the industries carried on, is not without influence on textile developments. Manchester silk manufacturers point out that these surroundings are very unfavorable to the production of many goods that can be made in Lyons. The dirtiness of the air has moved many finishers of white goods to take special precautions, as for instance in having drying machinery enamelled white so that dust can be seen as soon as it effects a lodgment. One finisher of white wool goods is said to have walls, woodwork and machinery all enamelled white. A Bradford dyer, troubled by coal dust as well as by smoke, surmounted a heartbreaking series of difficulties only by taking in air for the white department through the mill roof and conducting it downwards through filters to a horizontal trunk for distributing air in the room. These measures do not exclude all dust, but in conjunction with active care in covering all standing goods with clean sheeting they make satisfactory results possible. Mill chimneys are well watched by the smoke inspectors and are perhaps more apt to turn out grit than soot in these times. Household fires consuming or distilling soft coal in open grates are believed to be the most efficient air polluters, but they get some assistance from industrial furnaces in such places as Glasgow, where there is a soot-and-dust fall of 1,330 tons per square mile per annum. New gauges that are now being erected in various towns will give fuller information concerning dirt in some other places. The loss of sunlight through smoke and dust suspended in the atmosphere in manufacturing towns in this country is computed at 25 to 40 per cent. Fifty years ago Leeds people used to grin at each other through the smoke clouds and say, "More smoke, more trade," but that dogma has been fatally shaken.

* * *

A speaker at a textile students' dinner in pointing out ways to become a millionaire mentioned one which should produce the desired result in five years. All that is needed is to invent a process for softening the handle of wool so that manufacturers can give the softness of 64s to cloths of 50s to 56s quality. The reward may look liberal in relation to the achievement, but it has to be recognized that the highest class markets of all countries demand this softness as a minimum. When the price of merino rises to excessive heights attempts are made to substitute 56s, but the market is never comfortable with this quality and after ordering a few pieces resolves that what it really wants is 64s at a lower price. The lower quality may actually be the better value in wear, but it never fills the place of its superior satisfactorily. An achievement that would bring 64s down to the price of 50s, or establish the large supplies of fine crossbred in the same markets as merino ought to be worth a million in sterling, although some more momentous discoveries have brought less to their inventors.

* * *

It is recalled that when J. & P. Coats was formed into a combine twenty years ago the chairman told the shareholders they would not be given any particulars of the business, as the publication of details would be against their own interests. The rule has been kept and when the policy of the directors in respect of the handling of reserve funds has been questioned, they have met the challenge by offering to resign in a body. They have construed it as their duty to pay 35

per cent. on common stock and to pile up reserves of $45,000,000 behind the nominal $50,000,000 of capital. Their profits last year are about $500,000 higher than before and are very close to $15,000,000. Three members of the Coats family deceased within the last two years have left an aggregate twenty-five millions and it is to be expected that the visible total will be considerably increased by the recent death of Peter Coats, whose fortune is not yet disclosed. These profits from sewing thread mainly made in the last twenty years interest people who remember that Paisley was so notoriously poverty-stricken half a century ago that its people would resort to any circumlocutions to conceal their place of origin from strangers.

* * *

Derby is not distinctively a textile town in these days, although there may be about 2,000 persons employed there in winding and throwing silk, wrapping electrical wires, making fancy cords, trimmings and knit goods. It has, however, a peculiar interest for textile folk as the site of the first mill to be erected in England. The mill was Lombe's, who introduced power silk-throwing into England from Italy in or about 1717. Two fires have destroyed the last traces of the original structure, but it is still possible to visit the island site in the river Derwent and experience there the strange emotions that overcome one in considering the developments at large of the modern factory system from its cradle. Places of less intense interest are certainly visited by American manufacturers on their trips to England. The adjacent electrical works and the modern flour mill and flypaper factory occupying the historic site are not favorable local influences, but there are old buildings near at hand to assist the imagination. On the approach in Old Silk-mill Lane there is a genuine relic in the form of a pair of gates, not much more than six feet in width, but of great beauty. These wrought iron gates, which are the property of the Corporation of Derby, bear Lombe's monogram. In looking at them it is worth bearing in mind that in 1732 the mayor, aldermen, brethren and capital burgesses of Derby opposed Lombe's application to Parliament for an extension of his patent. They represented that the introduction of silk-throwing had been injurious both to the woolen industry and to the borough in general. Agreeing that the machinery employed a great number of hands, they pleaded that it kept the poor at home, thereby increasing the number of persons to be maintained by the poor rate.

* * *

Steps are in progress to secure a revision of the regulations as to the sorting, washing and combing of wools liable to convey anthrax and to bring the rules into line with

THE GATE AT THE OLD SILK MILL LANE

the increase of knowledge. The old theory was that the infection lay in the dust and the principal aim of the rules is to remove dust by fan-suction so that it shall not be breathed or be allowed to lodge. Dust is in some circumstances still a danger, but it is an established fact that dried blood present upon the fleece is the prime source of evil and the new regulations will certainly provide for the disposal of blood clots. Van mohair and in a lesser degree Turkish and Cape mohair, Persian and East Indian wool camel hair, alpaca and cashmere are the most prolific sources of contagion and as these ma-

terials are dealt with mainly in the Bradford area that district provides the largest crop of cases of disease. If the Bradford coroner is right, deaths from anthrax may be more numerous than has been recognized. At all events in one case death from anthrax was proved after natural causes had been ascribed. In another instance where anthrax was suspected as the cause medical testimony showed that no germs were present in the blood of the deceased. The facts disclose a margin for doubt which can only be set at rest by systematic investigation. In the case first named the sufferer died from an infection that could not, in the doctor's opinion, be more than five days' old, yet he had not been at work for three weeks. It was declared possible that the bacillus had been carried in his clothing for that length of time. The alternative possibility was that the germ might have been conveyed by his bedfellow, who did not personally contract the disease. In the eight years, 1905-1912, there have been 75 recognized cases of anthrax in the city of Bradford, of which 29 have proved fatal.

* * *

W. P. Dreaper, a chemist who has paid close attention to the nature of artificial silks, has propounded a formula based upon statistics. Omitting the data, his calculation is that the British textile industries would employ 600 chemists if one were engaged for every two thousand employes. Each would have the supervision of goods worth $2,500,000 upon the average and they would save five millions of expense if they succeeded in cutting 10 per cent. off the coal bills. How many chemists are kept is unknown, but in the dye houses there are some fair chemists who are not employed specifically as such, although their advice is available. Perhaps the number of professional chemists is less than one hundred. However there are consulting chemists as well as staff chemists and for about the same fee as is paid to the accountant for the annual audit of the books a manufacturer can have an audit of his materials. He has a right to call upon the chemist's services in testing supplies or in solving little difficulties and this arrangement brings expert assistance within everybody's reach.

MOISTURE IN COTTON YARN

BY PERICLES

Notwithstanding the widespread discussion of moisture in cotton and the fact that everyone is tending towards all possible economies, there still remains the opportunity of increasing profits by regulating the amount of moisture. I have talked to a number of mill owners and superintendents and they claim that every progressive mill pays strict attention to this item. My experience has been that of a consumer and not a manufacturer of cotton yarn. Since I first gave this matter my attention I have kept track of all the cotton yarn used in one mill, which has amounted to over five million pounds, and had records of the moisture content. Of this amount about 10 per cent., or five hundred thousand pounds was English yarn, the remainder being American spun. The American yarn gave results varying from 5 to 7.7 per cent. of moisture, which was the highest figure obtained. The average was 6 per cent. The lowest results from the English yarn was 6.6 per cent., and the highest 9.1 per cent. The average was 8.4 per cent., or approximately the accepted standard. On the other hand, there had been purchased 4,500,000 pounds of American yarn whose moisture content averaged 2 1/2 per cent. below normal.

A car of cotton came to the mill and a sample was taken from the interior of a bale immediately and tested. This showed 5 per cent. of moisture. The bale was then spread open in the warehouse and the next day tests showed the presence of 6 per cent. moisture. This yarn had gained 1 per cent. by standing in the warehouse twenty-four hours. This was almost invariably the case with American yarns, and when the inventory was taken there was always found to be on hand a large excess of yarn over the amount purchased. While there are many spinning mills that see to it that their yarn contains the right amount of moisture, there still are many that do not give this any consideration, as evidenced by the fact that 4,500,000 pounds of yarn was purchased with a moisture content far below the standard.

In regard to the variation of moisture according to the condition of the atmosphere

at the time of testing, it is safe to say that this has practically no effect. When cotton is baled it is greatly compressed, and then tightly wrapped so that the surface exposed is negligible compared to the amount of cotton in the bale. When a sample is taken the bale is broken open and the sample taken from the interior. As this is immediately placed in an air tight receptacle there is very little chance for it to be affected by the atmosphere. A bale of cotton yarn was placed in a number of different rooms, varying from one warm and dry to ones cold and damp, and warm and damp. The total weight of the bale never varied more than three pounds. This is a little over one-half of one per cent. of the total weight of the cotton. In the case previously mentioned, the car of yarn had been in transit during a stormy spell, and when it arrived it was found that the roof leaked and considerable water had dripped onto the bales. In spite of this the moisture in cotton in the interior of the bale was only 5 per cent. It seems reasonable to presume, therefore, that the moisture content of cotton as just taken from the bale is the same as when it was baled in the cotton mill.

If the American manufacturer is to be on a more competitive basis as regards the English manufacturer, he should meet him on his own ground. If the English yarn man sees to it that his yarn contains the full limit of moisture, the American manufacturer who makes yarn such as has just been described is laboring under the additional handicap of curtailing his possible output 2 1/2 per cent.

I had quite a talk with the man who supplied some of the above yarn. His mill turned out 40,000 pounds a week. I did not think that he knew what the moisture content of his yarn was, so it seemed a good chance to find out. While talking I mentioned that today a concern must be up to date and know what they were getting, and to be sure they were getting cotton and not water the yarn should be sold under specifications. If the moisture was excessive allowance should be made. The man looked worried. He said his price had always been rock bottom, and he could not stand any possible loss from excessive moisture, but he knew his yarn was made honestly and did not contain much water. Of course specification buying would mean a give and take method. If the specifications allowed 8 1/2 per cent. moisture, any excess of that would mean a reduction in price, but also when the yarn was below that figure the consumer would have to pay a bonus to the manufacturer. Whether the man knew this or not I do not know, but I did know that he was not familiar with his own product for he could have increased his output 1,000 pounds a week at practically no cost.

If some manufacturers could see the inventory of this mill, and see the yearly consumption of cotton plus yarn on hand so greatly in excess of the amount of yarn purchased, it would convince them of how profitable it would be to have this gain take place in their own mill before the cotton was baled, instead of in the warehouse of the consumer.

CAUSTIC SODA IN SHEEP DIP

Editor Textile World Record:

I have read "Chemical's" letter in your November issue, in which he attacks the use of caustic soda in the sheep dip used on South African sheep. The suitability of this, or any other, sheep dip cannot be reasonably determined by a mere appeal to prejudice. Caustic soda and potash enter into soap, but it cannot therefore be said that wool ought never to be washed with soap, although it is best, of course, that the alkali should be fully neutralized. Moreover the conditions in which soap is used on wool are much more favorable to active harm than in the process of dipping a live sheep into an alkaline solution for two minutes. Those who have tried to dissolve wool in caustic soda are aware that the solution needs to be strong and hot and that the action requires some time to be thoroughly effective.

It is necessary to realize in what manner caustic soda does disintegrate wool. It acts by attacking the sulphur which all wools contain. But in the recipe given the caustic soda is supplied with an abundance of free

sulphur to begin with and it is obvious that in these circumstances even free alkali is much less likely to attack the sulphur present in the wool structure during a short immersion. As cotton bleachers may well know, caustic soda combines with sulphur to form sodium sulphide and incidentally to cause yellow stains upon the goods. Had "Chemical" gone to a little more trouble in his attempt to make manufacturers' flesh creep, he might have pointed out that sodium sulphide is the re-agent used by many fellmongers for loosening skin wool from the pelts of slaughtered sheep. The sulphide is painted on the flesh side of the hide at night and the wool can be pulled away easily by hand in the morning. I will make "Chemical" a present of this fresh suggestion, merely pointing out meanwhile that no cases of hairlessness from use of this dip have been reported from South Africa. The directions as to mixing so that the soda shall "boil readily" and as to standing up-wind in adding the soda to the sulphur cream, point directly to the chemical reaction between the alkali and the sulphur.

Doubtless it would be far better—were there no reasons to the contrary—to use no dipping compositions, but to work the animals in plain water. The sheep, however, are susceptible to insect pests and to diseases which do more damage to wool than even caustic soda. Dipping compositions are used as preventatives and it is for veterinarians to decide whether from the hygienic point of view one mixture is better than another. Manufacturers have not gone very extensively into the question of how sheep dips are made and several of the mixtures are secret, proprietary medicines which may contain ingredients either less or more detrimental than sulphide of soda. Articles known to be used in making sheep dips include carbolic and cresylic acids, arsenious acid, corrosive sublimate (bi-chloride of mercury), tobacco juice, alkaloids of tobacco, sulphate of zinc, carbonates of soda and potash, rosin soap and soft soap. It is difficult to be certain that any one dip is better than another, and a manufacturer may be moderately content with any medicine that is less injurious than the disease. It is significant that no tangible evidence is forthcoming to prove damage resulting from the use of sulphur and soda. Venator.

SETTING AND REMOVING RING TRAVELERS

From Mitteilungen ueber Textil-Industrie

The apparatus shown at Fig. 1 is manufactured by Gebruder Staeubli, Horgen, Germany, and used for setting and removing ring travelers. The object is to reduce to a minimum the time lost by keeping the machine idle. The travelers can be removed from 400 rings and new travelers set in their place by two girls in 6 to 7 minutes, an operation that by former methods requires from 20 to 30 minutes. As a result of this saving

FIG. 1

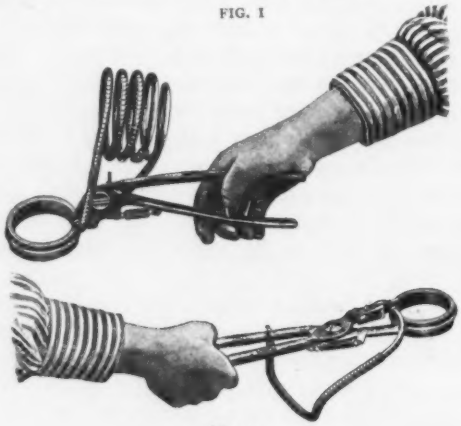


FIG. 2

of time the apparatus soon pays for itself. Heretofore the travelers have been generally placed on the rings by hand which is a difficult operation, especially in the case of heavy rings. Moreover much time is lost in separating the travelers. The new apparatus is provided with a removable spiral ring which serves to carry from 400 to 500 travelers. The travelers slide along this wire and one is set on the ring by a pressure of the hand on the handles of the apparatus. The apparatus for removing the old travelers from the rings is shown at Fig. 2. The pressure of the hand on the handle removes the traveler, which slides on a wire carrier, preventing all possibility of the traveler falling on the floor. No injury to the ring results from the use of these tools.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as an evidence of good faith.

If the question is not of general interest to textile readers and involves expensive investigation, a charge covering the cost may be made, of which the inquirer will be advised before any expense is incurred.

CROSS DYEING OF COTTON AND ARTIFICIAL SILK

Editor Textile World Record:

Is there any method of dyeing to prevent direct blues and blacks from going on the artificial silk in a cotton and artificial silk mixture dyed at a temperature of 120° to 140° F.? Solon (2148).

There is to my knowledge no method at present in use for dyeing ordinary white or colored effects on goods containing artificial silk threads. As the majority of artificial silks possess equal, if not greater, affinity for direct colors than cotton does, it seems very difficult with additions of ordinary substances to attain any suitable effects.

If, however, the material has been properly prepared before weaving, and other than direct colors are used, the case is different as several processes can be applied. By using, for instance, dyestuffs that dye only on a mordant, and mordanting only the cotton, if the same is woven with some of the ordinary artificial silks, and the woven fabric dyed in the said dyestuffs, it is possible to dye the cotton leaving the artificial silk undyed.

The following examples give an idea how the process is carried out:

Example 1: Weigh the yarn necessary for the amount of cloth to be manufactured, steep overnight in a 10 per cent. tannic acid solution. The mordant is best strong as it then draws more rapidly out of the bath the dyestuff during the dyeing; take from the mordant on the next morning, squeeze lightly, and treat in a 3 per cent. tartar emetic solution for twenty or twenty-five minutes; rinse and dry by hanging in a hot oven or chamber. When dry send to the weaver to be woven with the necessary quantity of artificial silk. The yarn destined for the warp that has thus been mordanted should not be sized, as this would only complicate the subsequent operations. As the cloth leaves the loom it can be dyed straight away in basic dyestuffs. It is, however, necessary to use certain precautions. For instance the coloring matter is added in small quantities at a time, letting the bath be exhausted between each addition. In this way the color is absorbed by the mordant before it has time to go on the artificial silk. A soaping after the dyeing should in all cases be avoided as it would through the bleeding of the basic colors dye the artificial silk more deeply.

Example 2: Boil the cotton well with soda and steep for twelve hours or overnight in a solution made up as follows:

50 parts acetate of chrome 32° Tw.
64 parts caustic soda lye 72° Tw.
2 parts glycerine sp. gr. 1.260.
84 parts water.

200 parts 32° Tw.

The addition of the glycerine is essential, or the alkaline mordant will become useless after a few hours, owing to insoluble compounds of chrome being precipitated.

When the material has been subjected to the steeping it is thoroughly hydroextracted and washed in running water for some time. It is then dried by hanging in a drying room. When dry it is sent in to be woven with the artificial silk. The cloth produced is next dyed alizarine black.

For this purpose a hot water bath is prepared containing three quarts of acetic acid 9° Tw. for every 1000 lbs. (120 gallons) of water and 25 lbs. common salt per 100 lbs. of cotton cloth. The required quantity of alizarine black is now stirred with three times its weight of water, and a small por-

tion of this solution added to the boiling dye bath through a fine sieve. The goods are then moved in the bath, and at intervals of ten minutes the rest of the dyestuff is added in small portions at a time.

After dyeing, the goods are well rinsed in hot water, and, if necessary, they are soaped and treated with a weak bleaching agent. In this way white artificial silk effects on a black ground are produced. If colored effects are desired these can be obtained by dyeing the artificial silk in colors that can resist the dyeing in alizarine black.

Example 3: The cotton yarn is first boiled in a weak lye till all impurities or size has been extracted, well rinsed, soured for a short time and rinsed again. It is then steeped overnight in a very weak sodium hypochlorite solution of sufficient strength to do the bleaching in ten or twelve hours. When the desired white has been obtained the goods are well rinsed, treated with a weak sour and finally washed till all traces of acid have been expelled. They are then hydroextracted and dried. The dry yarn is then impregnated in a bath made up according to the following recipe:

50 parts (by weight) Betanaphthol are dissolved in
50 parts caustic soda lye 36° Be and
600 parts warm water.
The following ingredients are added little by little:
100 parts Turkey red oil 50% fatty acids,
20 parts sodium aluminate dissolved in
200 parts water,
130 parts gum dragon thickening 5%.

1150 parts in all.

The yarn is then dried at 100° to 120° F. The material thus treated is then woven at once, as the mordant after a time undergoes decomposition. On receipt from the weaving shed it has to be passed for this reason at once through the developing or dyeing bath which is prepared as follows:

12 parts paranitraniline and
8 parts sodium nitrite are mixed carefully with
80 parts cold water. This mixture is poured slowly into
40 parts hydrochloric acid 22° Be.
200 parts ice and iced water
Mix for one-quarter of an hour, filter, dilute with iced water and bring in all to

800 parts.

Before using add a solution containing
50 parts acetate of soda in
150 parts ice cold water, and bring in all to

1000 parts.

After dyeing the goods are well washed in running water and treated if necessary with a suitable bleaching agent.

I am at present studying a method of treating the artificial silk threads to resist the dyeing in direct colors, and would be willing to sell the same if a convenient offer were made me.

Raffaele Sansone.

BLEACHING BINDING

Editor Textile World Record:

We are enclosing two samples of seam binding made of cotton warp and silk filling. We weave this in the white, but wish to dye it in colors. The white is quite satisfactory, but after dyeing it, as you will notice, it loses a good deal of the silky effect. We also find that the binding shrinks and seems to have a tendency to cover up the silk.

What would you advise as the best way of handling this binding in dyeing to get the best results as to non-shrinkage and to retain the silky luster of the filling? Mayfair (2206).

The marked defect in this binding is due to the defective preparation of the material, or rather to an improper boiling-off of the silk. Boiling-off frees the silk from the gum that surrounds it and renders it soft and brilliant. The boiling-off bath contains Marseille soap equal to 25 to 30 per cent. of the weight of the silk to be treated. The silk is immersed in this solution for two hours at 95° Tw. It is a good plan in order to preserve the white to immerse the silk from three-quarters to one hour in another bath containing only 15 per cent. of soap. After boiling off the silk is rinsed thoroughly, a small quantity of carbonate of soda being added to the bath. For clear shades like the

sample it is necessary to bleach in peroxide of hydrogen. The ribbon is treated from 4 to 5 hours in a solution of peroxide of hydrogen, 10 volumes, and 3 parts of silitate of soda at 40° Be. Then rinse thoroughly in water. Gaul.

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COUNTERVAILING DUTIES AND THE FIVE PER CENT. DISCOUNT

Editor Textile World Record:

Please state what effect the countervailing duty has on tops imported from Australia. Australia pays a bounty on a limited quantity of tops produced in that country. Does this result in the countervailing duty being imposed on all tops imported from Australia or only on the tops on which the bounty has been paid? Has the administration any discretion in collecting the countervailing duty? I would also like an explanation of the 5 per cent. discount clause which applies to duties on goods imported in American vessels. Is this discount calculated on the total value or only on the duty? Wollfabrik (2252).

The paragraph in the Underwood tariff law imposing a countervailing duty on certain imports is the same as the one in the Payne tariff, and is as follows:

That whenever any country, dependency, colony, province, or other political subdivision of government shall pay or bestow, directly or indirectly, any bounty or grant upon the exportation of any article or merchandise from such country, dependency, colony, province, or other political subdivision of government, and such article or merchandise is dutiable under the provisions of this Act, then upon the importation of any such article or merchandise into the United States, whether the same shall be imported directly from the country of production or otherwise, and whether such article or merchandise is imported in the same condition as when exported from the country of production or has been changed in condition by remanufacture or otherwise, there shall be levied and paid, in all such cases, in addition to the duties otherwise imposed by this Act, an additional duty equal to the net amount of such bounty or grant, however the same be paid or bestowed. The net amount of all such bounties or grants shall be from time to time ascertained, determined, and declared by the Secretary of the Treasury, who shall make all needful regulations for the identification of such articles and merchandise and for the assessment and collection of such additional duties.

During the consideration of the Underwood tariff in the Senate, the Australian bounty on worsted tops was discussed. Not long after that the Assistant Secretary of the Treasury sent the following letter of instruction to collectors of customs:

Treasury Department, Sept. 8, 1913.

To collectors of customs and others concerned:

The department has received from the Secretary of State copies of the "Bounties act, 1907," and the act amendatory thereof, cited as the "Bounties act, 1912," of the Commonwealth of Australia, from which it appears that export bounties are paid by the Government of that country as follows:

1. On fruits (except currants and raisins), or candied, for a period of 10 years from July 1, 1907, at the rate of 10 per cent. on the market value, the total payable in any one year not to exceed £6,000.

2. On combed wool or tops, for a period of three years from January 1, 1913, at the rate of 1d. per pound for the first 1,000,000 pounds made by any one manufacturer, and 3/4d. per pound for each pound in excess of 1,000,000 pounds made by any one manufacturer, the total payable in any one year not to exceed £10,000.

Collectors of customs are, therefore, hereby instructed that, in accordance with the provisions of section 6 of the tariff act of August 5, 1909, additional duties equivalent to the export bounties paid by the Commonwealth of Australia upon the said articles should be collected thereon when imported either directly or indirectly from that country.

The Secretary of State has this day been requested to instruct the American consular officers concerned to certify on invoices of the articles in question the amount of the export bounty which has been or will be paid thereon by the Australian Government.

This decision will take effect 30 days after date.

Charles S. Hamlin, Assistant Secretary.

This letter makes it reasonably clear that worsted tops imported from Australia since Oct. 8, 1913 are subject to a countervailing duty equal to the amount of the export bounty paid on such imports as certified on the invoices by the American consuls. If no export bounty has been or will be paid then no countervailing duty is collected when the tops are brought to the United States.

The paragraph in the Underwood law providing for a 5 per cent. discount on goods imported in vessels of American registry is as follows:

That a discount of 5 per centum on all duties imposed by this Act shall be allowed on such goods, wares and merchandise as shall be imported in vessels admitted to registration under the laws of the United States: Provided, That nothing in this sub-section shall be so construed as to abrogate or in any manner impair or affect the provisions of any treaty concluded between the United States and any foreign nation.

This discount paragraph has proved thus far to be a dead letter. Nearly all foreign

nations have treaties with the United States, which expressly provide that their products shall be admitted on as favorable terms as are granted to products imported in vessels of American registry. Under these conditions an enforcement of the discount paragraph in the present law would mean a reduction of 5 per cent. of the duties on all imports. The administration had thus far collected the Underwood duties without discount, and, unless this policy is changed, the enforcement of the discount clause will have to wait on the slow process of changing treaties with foreign nations. The discount paragraph makes it quite clear that when applied to the Underwood duty on tops it would mean a reduction of 5 per cent. of such duty, that is, from 8 per cent. to 7.6 per cent. ad valorem.

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VARIATION IN SIZES OF HOSIERY

Editor Textile World Record:

I would like to know the ratio of reboards or odd sizes and sizes running larger or smaller than intended in making silk hose like sample enclosed; also the ratio of gauze weight hose manufactured on the Mayo model A and C machines. Out of a batch of 50 dozen what is the average number of off sizes? Booth (2247).

When machines are properly set for one size there should not be any variation in sizes except in the variation of the yarn and that will be found very small, either in silk or with the size used in gauze, which is generally about 2/80s on 240-needle, 3 3/4-inch machine, or 220-needle on 3 1/2-inch machine. It is possible that in running through a batch the size on the machines may be changed. Unless the fixer happens to hit it the first time he may have to make three or four stockings before getting the size right, and of course, the more machines used in making the batch the more off sizes will be the result. The machines all run with a chain for length and changes. When once set and length of stitch not changed all goods should come off alike except for variation of yarn. If the yarn runs heavy the goods will naturally be tight and short and just the reverse when the yarn is lighter than it was when the length of stitch was set for the size intended.

The variation of yarn should cause little trouble as a number of ends are used in silk and it is very seldom if ever that all light ends come together at one time. In cotton there are usually two ends twisted together, and the same rule will apply. Cipango.

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YELLOW SHADE OF MERCERIZED GOODS

Editor Textile World Record:

I am having some gray goods made for a customer. The yarns are mercerized and the goods shipped to a bleachery. When these goods are woven with a plain weave there seems to be no trouble, but when they are woven with dobby figures, my customer complains that when returned from the bleachery the cloth has a yellowish tinge. Upon taking this up with the mill I am assured that the cotton and the mercerizing process for the yarns and all other details have been precisely the same as in the case of plain weave. The bleachery contends that the process is precisely the same as in the case of the plain wave and they are unable to account for the yellowish tinge. Can you throw any light upon this? Do you think mercerizing yarns are apt to affect them so that when cloth made from them is piece-bleached it would have a yellowish tinge, which would not be the case if the yarns had not been mercerized?

Manhattan (2236).

It is difficult to reply in a practical and intelligent manner to this complaint without a sample of each of the two kinds of goods referred to. Just why the plain woven goods should be free from trouble and the figured weave show the discoloration is impossible to explain, in view of the bleachery's statement that the chemical treatment of the yarns is exactly the same for both classes of cloth.

Yellow discolorations have been traced directly to the presence of iron entering the bleaching process at some point. Rosin soap has also been responsible for discolorations. Excessive bleaching is known to cause trouble which shows as a yellowish tinge.

The presence of ultramarine as a whitener when used in the dressing of yarns is often responsible for yellowing of otherwise white and well bleached goods.

There are a number of circumstances that might contribute to this disagreeable defect, but a correct diagnosis of the case can only be made after a sample of the goods be forwarded for examination. A clipping not less than 100 square inches is necessary for a proper test. Berwick.

CARDING SILK NOILS

Editor Textile World Record:

In carding 4 1/8 run yarn from 100 per cent. white silk noils we are troubled with the roving sticking badly on the card condenser rub rolls and also on the rolls of the spinning mule. We oil this stock with a double pressed red oil emulsion. Can you give us a remedy for this difficulty?

Humphrey (2223).

I have run white silk noils up to 5 1/4 run and always take them right from the bale, run them through the mixing picker to loosen them up, but never put any emulsion on them. Have the rub aprons smooth and do not run the fancies on hard. I have used red oil that made the stock stick to the rubs. I do not think it is a good plan to use red oil for cotton or silk. I run the doffers on the first and second breakers very slowly so as to get out all the splints, seeds or any foreign material that may be in the stock, but as stated above I do not use any oil or emulsion. Krenzer.

I have never used oil or emulsion on silk stock and do not wonder that "Humphrey" is having difficulty. Silk noils should be moistened up to 10 per cent. with a light soapy water or plain water could be used. It is a good idea to leave the stock pressed in a closed box for two or three days during which time the moisture is evenly distributed throughout the fiber. Wheaton.

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VARIATION IN YARN SIZES

Editor Textile World Record:

We have been having trouble with all our yarn, which reels heavier than the count ordered. While we know there will be some difference, yet it has been too much and always on the heavy side. About what variation should we count on? Remember we buy in the East and it is shipped West, which will make a difference. In reeling worsted, wool and cotton yarn how many yards should be reeled and into what number should the number of grains be divided in each case?

Caravel (2231).

The question of variation in yarn sizes depends on the conditions under which the tests are made. If the sample measured and weighed is large enough to give a fair test (120 yards is usually considered ample), with the same tension in reeling, and with careful weighing under the same conditions of temperature and relative humidity, the results would be comparable. Any variation in tension during reeling, inaccuracy in weighing or variation in the temperature and relative humidity at which the tests are made, would cause corresponding differences in the indicated count. The variation due to changes in temperature and humidity are important, though generally ignored. Take for illustration a cotton yarn which when tested on July 17, 1911, at Boston, Mass., with the temperature 68° F. and the relative humidity at 97 per cent., was found to be No. 60. The same yarn if tested on January 8, 1912, with the outside temperature at 80° F. and the relative humidity 62 per cent., in a room heated to 70° F. without regulating the humidity, would have been No. 67.4. "Caravel's" complaint as to heavy yarn is dated August 30. If he makes a careful investigation of the conditions under which he is testing the yarn for size, he will probably find that the high degree of relative humidity at that time of the year is responsible at least in part for the variation of which he complains. The yarn should be tested for size under uniform conditions. The cotton count is equal to 1000 divided by the weight in grams of 120 yards. The worsted is equal to 1500 divided by the grain weight of 120 yards. The woolen run is equal to 525 divided by the grain weight of 120 yards.

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PREPARING YARN FOR MERCERIZATION

Editor Textile World Record:

I am informed that in mercerizing cotton yarn in England it is sometimes the practice to dispense with the boiling out of the yarn before mercerizing in order to clean it and to precede at once with mercerizing the yarn, adding a small quantity of petroleum to the caustic liquor, the petroleum causing an immediate impregnation of the material by the liquor. It is stated that the disadvantage to this method is that the petroleum imports an objectionable odor to the yarn. I would be glad to have you give some account of this process if you can get the information.

Houston (2262).

The regular English practice is first to steep and then to boil the yarn in a weak caustic soda solution before proceeding with mercerization. Inquiries made have failed thus far to elicit the name of any works in which the preparation with petroleum is practiced. The method is feasible, as has been shown by the series of experiments re-

ported by Schneider. He wound raw cotton yarn round a rectangular frame and on immersing this in lye, without previous preparation, found that the impregnation was incomplete even after one hour. One sample was treated with petroleum and he observed that on placing this into the lye the petroleum rose at once in small drops to the surface, no air bubbles formed upon the yarn and the sample was impregnated immediately.

The case was the same when benzole was used instead of petroleum. Schneider used, not caustic soda, but the sulphide of either potash or soda. It is improbable that this affected the result, as it was almost certainly the caustic hydrate present in the sulphide that was the efficient agent in improving the luster of the sample. Schneider patented (English patent 19,428 of 1896) his method of mercerizing in a 30 per cent. solution of sulphide of soda or potash with an organic solvent floating on the top of the lye. The yarn to be saturated with the petroleum or benzole in entering the vessel was immersed 15 to 30 minutes, stretched and then rinsed. Perhaps this process is the one in view.

Strand.

WASTE IN THE MANUFACTURE OF LACE CURTAINS

Editor Textile World Record:

I enclose sample of cotton yarn waste of which we make from 2,000 to 3,000 pounds per week in the manufacture of lace curtains, and are compelled to sell it at a very low price. The yarn, which is 60s to 100s, is of exceptionally high grade, being made from the best Sea Island and Egyptian cotton. It is imported especially flattened and finished for lace fabrics made on Lever and Nottingham machines. The large quantity of waste is caused by the fact that it is necessary to change all the bobbins in the machine at one time to prevent knots from being made in the body of the curtain. The pieces of bobbins that are removed go to waste and we have been unable to find any way in which they can be used to advantage. The result is a very heavy loss. We would be glad to have you inform us how this loss can be reduced. What methods are adopted abroad for handling this kind of yarn in the manufacture of lace curtains? Merwin (2230).

Our French correspondent to whom this question was referred, replies as follows:

I have carefully examined the sample of waste sent with "Merwin's" inquiry. It is necessary to handle the yarn as "Merwin" states when making lace curtains on the bobbin machine. All the bobbins must be removed at the same time. This is the rule both at Calais and Nottingham. In place of cutting the yarn from the bobbins and running it into waste, the practice in the two lace centers named is to rewind the yarn. The pieces taken from the machine are rewound on a special machine, the ends being joined by knots in order to fill the new bobbins. I hope soon to send you a sample bobbin and also a photograph of the winding machine used at Calais.

This work of winding is done very economically by child labor, the wages being 5 centimeters ($1) for 60 bobbins that are rewound. The thread thus obtained of course contains knots where the ends are joined and consequently cannot be used on the bobbin lace machines, but can be used on the Lever machines where the knots pass into the fabric without difficulty. The rewound yarn has a less value, but is sold at a discount of 30 per cent. at the most to lace manufacturers using the Lever machine. I would suggest that "Merwin" rewind his yarn as is done at Calais and Nottingham and am convinced that he will find customers for the rewound yarn at Pawtucket, R. I.

Gaul.

PRODUCTION OF SPUN SILK YARN ABROAD

Editor Textile World Record:

Please give me a statement of the comparative production of spun silk yarn in England and on the Continent. Apex (2184).

The general estimate of the world's production is 5 million kilos (12,000,000 lbs.).

The British production (1907) was 2,300,000 lbs. and will now be a little larger.

The Continental production is very much larger than the British and it is probable that a single French concern makes as much yarn as the whole 22 English spinners.

The German output is about the same in quantity as the British.

France, Switzerland and Italy are the chief sources and their business is a development practically of the last 50 years.

English spun (fully-discharged yarn) differs in character from Continental schappe and the two serve different purposes, as well as some similar purpose.

The velvet trade is the great consumer of schappe yarn. Regent.

BLEACHING SILK HOSIERY

Editor Textile World Record:

Please send us a receipt for bleaching silk hosiery. We are at present bleaching mercerized and cotton hose with chloride of lime and having very good success in this line, but have some silk hose that we wish to bleach, and would thank you to give us a formula for same.

Elcot (2199).

Silk hose to be made ready for bleaching should be thoroughly cleansed with a light soap boil, care being taken that all soap is afterwards completely removed by a good wash. Successful bleaching can only be accomplished where the silk is clean. Silk may be bleached by different processes, the most common being either by the use of permanganate of potash and bisulphite of soda. It may also be bleached with either peroxide of hydrogen or peroxide of sodium.

The permanganate process was formerly very much used for bleaching all kinds of silk goods and when the details are given attention, the results are very good. The following quantities are for a small kettle holding sufficient water to accommodate 20 to 25 pounds of silk hosiery. To such a bath dissolve 6 ounces of commercial permanganate of potassium and add 1/2 pound of Epsom salt. The hosiery is worked in this solution until the purple color is nearly removed and the silk has attained a full rich brown color. Lift, wash, and work the brown hosiery in a fresh bath containing 6 ounces of a solution of bisulphite of soda standing at 71° Tw., together with 1/4 ounce of sulphuric acid, first diluted in a pint of water. Sometimes where the deposit of brown oxide of manganese is very heavy, a second passage through the bisulphite becomes necessary.

Bleaching with peroxide of hydrogen or peroxide of sodium is perhaps the best method for general use. Peroxide of hydrogen is used full strength (3 per cent.) as supplied by the chemical works. The silk is immersed in the solution in suitable wooden tanks without any iron or other metal in contact with the bleach solution. This solution must be made slightly alkaline with ammonia. Keep the silk well under the surface of the liquid, even if a wooden lattice is necessary. Let the bleaching proceed for six to ten hours or longer, over night is the usual practice, and in the morning, lift, squeeze to save the excess of liquor, rinse and finish.

If peroxide of sodium is used, it must be added to the bath in small portions at a time, first adding the necessary amount of sulphuric acid. The following quantities are used for 25 pounds of silk hosiery:

60 gals. water
5 lbs. sodium peroxide
8 lbs. Epsom salt.

The temperature of the bath may be gradually brought up to 180° F. if necessary, allowing the silk to remain immersed for 6 to 8 hours, afterwards lifting, washing, dyeing white if desired, and then carefully put on drying boards. Dumfries.

PASTE FOR COTTON GOODS

Editor Textile World Record:

We want to make a paste of sago flour to use cold, but find it jellies so that it will not spread smoothly and get lumpy. Can you suggest a remedy for this, something to add to the paste when warm that will pevent it from jellying? Ordinary flour paste when cold does not act this way, but we need the sago paste for a special purpose.

Finisher (2250).

My experience has been that paste made from farina, sago, corn, wheat and flour will separate, that is, the water will separate from the starch if left standing too long in a cold state. This condition will develop in twenty-four hours. If a soluble oil is used to remedy this difficulty the adhesive properties of the mixture will be affected. I have been making a few experiments and find that by not over cooking the sago paste and by adding 1/4 (one-quarter) the weight, say 12 ozs. of sago and 4 ozs. of British gum (white dextrine) it will not get lumpy for some time. When the lumps do appear I stir the mixture well and the paste seemed to be as good as ever, but smells sour after 48 hours. The longer the paste is boiled the sooner it begins to separate. Just bringing the paste to a boil and stirring well appears to be the right thing to do after adding the dextrine. Montrose.

Knitting Department

THE KNIT GOODS SITUATION

Since our last issue, the entire line of knit underwear has been opened for business for fall, 1915, delivery and a fairly good volume of business has been placed, although considerable of it is in the shape of blanket orders to be confirmed later when the buyers go to the market in December or January.

Cotton goods, of course, all show stiff advances in prices over last year's quotations. Buyers are going slow on some lines, particularly on ladies' vests and pants to retail at twenty-five cents. The prices of this class of merchandise are about as follows:

Five pound peeler at about $1.90. Six pound peeler at $2.05. Seven pound peeler at $2.20. Five pound bleached at $2.05. 5 3/4 pound bleached at $2.15. Six pound peeler extra sizes at $2.10. Seven pound peeler extra sizes at $2.25. 5 1/2 pound bleached extra sizes at $2.15. 6 1/2 pound bleached extra sizes at $2.30.

These quotations might be better about five cents per dozen for goods, if taken during the early months of the year, averaging around May first.

Buyers generally are quite agreed that ladies' vests and pants made from five to six pounds in weight and a fabric heavy enough to brush are of little use to the consumer. If great care is taken, fairly good looking samples of this class of goods can be shown, but in running the stock through the brusher, the garments become narrow and as a rule, open up unsatisfactorily. We have heard of several buyers who say they will not have 25 cent underwear in their lines for 1914. This condition will undoubtedly increase the demand for vests and pants to retail at 35 to 39 cents, and some attractive lines are being shown at $3.12 1/2 to $3.25. They are made plain stitch of carded yarn and weigh about seven pounds to the dozen. They are bought only in bleaches; in fact, very few peelers are being sold in any lines in either two piece or combinations.

Combed yarn vests and pants sold last year at $3.50 are all priced this season at $3.62 1/2. One noticeable thing in reference to the sale of these goods is that a large proportion of them are being taken made with short sleeves. This applies to vests, and combination suits as well.

Lines of women's heavy fleeced vests and pants sold under trademarked names, like "Vellastic" and "Velvet Lined" are being priced $3.62 1/2 against $3.50 last season, and the manufacturers have removed the restriction as to the jobbing prices.

Plain stitch carded yarn suits sold last year at $4.50 are now priced at $4.75. The $6.00 and $6.25 lines have also been advanced 25 cents per dozen. One line of combed suits sold at $6.50 has been raised to $7.00.

The Royal Gem Mills and Oak Knitting Mills, both of which made 8 pound plain stitch suits last year at $3.62 1/2, have discontinued these numbers for 1914.

The high price of cotton has had the effect of raising the quotations on men's ribbed and fleeced goods to the limit, $3.75. This is the price at which the Morris Mills are offering their two threaded ribbed shirt and drawer, but they have reduced the weight from 12 to 11 pounds.

The Utica Knitting Co. are also asking $3.75 for their 11 pound ribbed shirt and drawer and the same price for their 12 pound fleeces.

One line of ribbed goods made by a Southern manufacturer was sold for a time at $3.50 for 11 pound, but it is understood that this line has now been withdrawn from sale. This manufacturer's production is usually taken by a few of the larger jobbing houses in the Southwest.

The High Rock Knitting Mills have issued a circular letter to the trade to the effect that the present prices of fleeced shirts and drawers make it hard for either the manufacturer or the jobber to show a profit, but

urging the sale of men's fleece lined union suits in their stead. These may be bought by the jobber at $7.00 per dozen for one quality, or $7.25 for the High Rock standard with the understanding that they are to be sold to the retail trade at $8.62 1/2.

There is no question but that the demand for fleece lined combination suits is increasing along with the demand for ribbed suits. We learn that some manufacturers of men's flat wool goods are getting out samples of combination suits to show for 1914 business.

HOSIERY

Since the middle of November, a large business has been placed on wool hosiery of all grades and there is considerable talk heard of some manufacturers being sold up for the season. The lower grades have been sold at slightly advanced prices over last year; the medium grades at about the same as for 1913. On the better end there have been lower prices by from 10 to 12 1/2 cents per dozen. In some cases the same prices are maintained where the qualities have been improved.

Stocks in the hands of jobbers and retailers are very light, as there has been a good demand for wool lines all during the present fall. Manufacturers have been so busy on orders that there has been no opportunity to make up any stock lots.

Worsted half hose for fall are being offered at 5 to 7 1/2 cents per dozen less than last season's quotations. Lines that were $1.90 are now priced at $1.85 and some $1.75 numbers are offered at $1.67 1/2.

Low priced merino goods were sold last year at 92 1/2 cents to $1.00 are priced the same generally for the coming year.

On account of some new hosiery factories having been built principally in the South, there have been a number of new lines shown in the market of late. These are low priced goods, but some of them are showing some fiber goods at attractive prices, namely, $1.82 1/2 to $1.90 and one line of tram silk half hose in wide range of colors is being offered at $2.00.

Reports from Chemnitz state that hosiery manufacturers are much exercised just now on account of the high raw material prices. Although they had been anticipating making some low prices to tempt the American buyers, their calculations have been upset by the high cost of cotton and they have practically given up hope for any large business for the present.

South America continues to take German hosiery freely as does also India, so the German manufacturers are fairly busy.

Consul Anderson of Hong Kong reports that the Chinese are buying freely of American seamless hosiery, especially silk and fiber goods that retail here at 50 cents and which are sold there for a Hong Kong dollar, which is worth about 47 cents.

Among the novelties that are attracting attention are the ankle bracelet design made principally of black silk with band about an inch wide of high color around the ankle of the stocking. These are being taken in green, yellow, blue and purple bands and to match the shade of the gowns of the wearer.

SWEATERS

The past four weeks have not been good sweater coat weather and the market looks quite different at this time than it did at the time of our last issue.

Retailers and jobbers throughout the country seem to have a stock of sweater coats on hand and of late many manufacturers have received cancellations for numbers that were being eagerly demanded a month or six weeks ago.

Shaker knit garments have suffered particularly, but Jumbo stitches are meeting with more ready sale.

Travelers are out soliciting next fall business and while there are some who claim to have received large orders, most of them are complaining quite seriously.

One buyer gives his opinion that sweater coats will continue to be good as a staple garment for men, but that their place as women's garments has been taken of late by the sport coat made of woven cloths and also by the Mackinaws.

The low priced cotton coat business is now practically in the hands of two manufacturers,—Union Mills of Hudson, N. Y.,

and Phoenix Underwear Co. of Little Falls. Their prices for 1914 are as follows:

V neck without pockets at $3.75. V neck with pockets at $4.00. Byron collar or ruff neck without pockets at $4.25. Byron collar or ruff neck with pockets at $4.50

The next price at which men's coats are moving well is at $7.00, at which fairly good quality of cotton garment may be had either from Union Mills or Gilbert Mfg. Co. These are made with one piece shawl collar put up in 2/12 boxes and get to the consumer for $1.00 in a general way.

A number of shaker knit coats made of low grade stock are being shown at $12.00 to $16.00, and at $21.00 a good grade worsted face, cotton back coat may be had.

The shawl collar, shaker coat that sold last year at $36.00, of which there were many lines, are priced for 1914 at $31.00 to $34.50.

Rope stitch garments with shawl collars are being shown by many manufacturers at $21.00 to $27.00 and it is on these lines principally that large jobbers have placed orders for next season.

Several manufacturers have added brushed coats to their lines and buyers have shown some interest in these at $30.00 to $42.00.

Some very slightly two toned numbers are being shown at $37.50 to $39.00 with shawl collars and wide belts.

Some buyers have bought sparingly of ladies' light weight brushed coats made to imitate the imported garments in high colors and in green and heather mixtures. These may be had at $36.00 to $48.00 and there are some buyers who predict a good trade in this class of coat before the season is over.

One manufacturer is showing a knit sport coat at $60.00 on which a few orders are being placed for popular colors, such as Kelly green, fawn, magenta, Copenhagen and mahogany with contrasting trimming on collar, pockets and belt. These are made with large buttons, the centers of which match the body of the coat and the rims match the trimming.

The world's production of raw silk for 1913 amounted to 54,233,725 pounds, as compared with 55,821,035 pounds in 1912.

SEAMLESS HOSIERY

Editor Textile World Record:

It has been with a great deal of interest, mixed with amusement, that I have read the article "How Seamless Hosiery is Made," by "Laramie," in your September issue. I would not be critical, but would like some points explained. "Laramie" begins with "Children's Ribbed Hosiery." He gives the sizes and diameters of machines that make the various sizes of hosiery, also the number of needles in each machine. First, I would like to know if a machine of 3 3/8 inch diameter is not a little large for making these particular sizes, which are 4 and 4 1/2? These sizes are made on a smaller diameter now, 2 3/4 inch diameter being used. I have made a few children's hose and I have used different size machines. Fourteen years ago I used for 5 and 5 1/2 a 3 1/4 inch diameter; for 6 and 6 1/2, a 3 1/2 inch diameter; for 7 and 7 1/2, a 3 3/4 inch diameter; for 8 and 8 1/2, a 4 inch diameter; for 9, 9 1/2 and 10 a 4 1/4 inch diameter. Later, for infant's sizes I used for 4 and 4 1/2 a 2 3/4 inch diameter; for 5 and 5 1/2, a 3 inch diameter; for 6 and 6 1/2, a 3 1/4 inch diameter; and rise one-fourth inch to size up to and including 10s.

I note that "Laramie" says that to make a medium fine gauge stocking, he uses a 3 3/8 inch diameter, with 68 needles in dial and 68 needles in the cylinder. Further on in the article he says that for very fine gauge he uses 85 needles in both cylinder and dial, which would give him 42 1/2 needles to each cylinder and dial. This would make very much coarser goods than his medium gauge. Besides I do not see how he would work the half needles. He says, too, that these goods are made from yarn which has been previously dyed black. This is a practice that is practically a thing of the past, because it is very difficult to top and knit, while the white can be handled cheaper and dyed and finished better and with less cost and waste.

I note that "Laramie" makes 8-8 1/2, 9-9 1/2 and 10 all on the same size machine, but on the 9-9 1/2 and 10 he increases to 98 needles instead of 90. This would naturally change the gauge. He seems to be some-

what tangled on his lengths. Children's hosiery, like all others, is measured from the back of the heel to the tip of the toe, the length in inches being the size of the stocking. The length of the leg should be three times that of the foot, up to size 9. Size 9 and above for regular sizes is 27 inches.

In his coarse gauge on two and one rib he has 120 needles in the cylinder and 61 in the dial. Now there is more division of needles that the writer would like to know about. If you make a two and one rib you must have half as many dial needles as you have cylinder needles. I think 60 needles in the dial would be better. In speaking of machines that make the feet of these hose, "Laramie" describes them as having two cylinders, which type of machine is very much out of date now.

Further on he gives a case where one operator keeps 5 machines knitting "ankles, heels and toes" while 4 other operators are topping on the "legs." I notice throughout the article that neither of the kinds of stockings mentioned have feet; nothing but "heels and toes." Well "Laramie" may come out O. K. along these days without making feet to stockings, but I have to make feet to 'em yet. However, I think if we get them a good deal thinner, we will have to ask "Laramie" to tell us how to make heels with highsplice double sole and toes with nothing on the top side of the foot, and no leg at all. It seems that those who wear hosiery today want to protect their heels, soles and toes, but care very little about the other parts. If "Laramie" can give us a formula for making these "legless" kind we will all have business for next year, and the tariff will not get in our way.

Now he says that with one operator running five machines, it is up to the knitter to work quickly to keep the toppers busy and naturally the toppers work quickly to get a rest while the stockings are knitting out. "Laramie" reminds me of the son who asked his father why he wished him to go to bed so early, to which the father replied, "Why, my son, so you can get up early." But the son asked, "Why do you want me to get up early?" "So you can go to bed early. You know very little about the true philosophy of life, my son," the father replied. So I suppose this is the true philosophy of knitting. I know when I was a topper I would rather make the knitter wait just to aggravate him. But I believe he is using girls on this job and they do not work that way.

I take special note that in making ladies' hosiery, "Laramie" gets a sinker between each needle. Now there is where he's got me beat. I never have been able to get a sinker between one needle. I can get one sinker between two needles.

He says he is a getting a production of 8 dozen per day of ladies' hose 30 inches long from a 208 needle machine. Now I would like to know at what speed he would run that machine. I have made 4 1/2 to 5 dozen per day of 11 hours from a 200 needle machine. Eight dozen looks a little large unless he runs his machine over time or at a very high speed. I run at 275 revolution per minute, which I consider a very good speed for fine gauge.

He mentions making ladies' hosiery legs on a machine that has no sinkers and that this machine has a diameter of 4 3/4 inches and contains 240 needles. That is a pretty large diameter for a woman's stocking. A 3 1/2 inch diameter with 220 needles makes a stocking for anything less than out-sizes. He says that sometimes these are topped onto a machine. Now, this method may have been used 20 or 25 years ago. We are proud to say that we are improving our methods. He says that these machines make 4 to 6 dozen per day and six machines will make about 100 dozen per week. Four dozen to the machine per day would be 24 per week. Six machines would make 144 dozen per week. If we take an average from what he claims per machine per day of 5 dozen, this would give about 180 dozen per week. But it may be that the machines are as the old country woman thought the first train she saw, "Perhaps it gets tired" toward the last of the week and does not produce the full amount.

To make men's half hose "Laramie" says a 4 inch diameter cylinder and dial are used and that there are 100 needles in the dial

and 100 in the cylinder. Large and outsizes are made on a 4 3/8 cylinder and dial and that there are 212 needles in the cylinders and 212 in the dial. This does seem a little like the story that is told of the fellow who fell from an electric light pole and an Irishman was sent to see if he was hurt. On being asked, Pat replied that "he was not very much disfigured, but he seemed terribly twisted." The man was in a dark room when he put on his trousers and got the front on the back side. "Laramie" seems to have his figures on wrong. 424 needles to a machine for making half hose is more than I can get into a machine of that size. Then, too, it would make the hose very large. He says another kind or grade of men's half hose is made on a full automatic machine having two cylinders. This is also a back number, as the Quill transfer has got it beat a block.

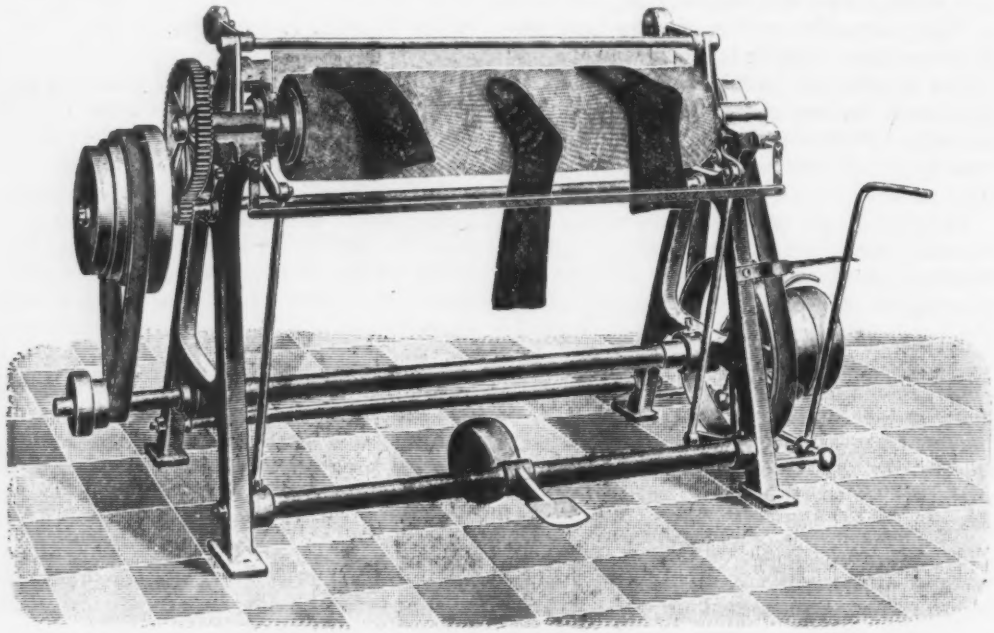
It appears that "Laramie" has made some mistake, or else he did not intend that this should be taken literally.

I think that "Laramie" has been running some out of date machines here of late or he has been out of the business for a long time, as the machines he mentions were the same that were used about 20 years ago. Perhaps "Laramie" may be able to explain.

Pete.

FLEECING MACHINES FOR HOSIERY, SWEATERS AND PIECE GOODS

The machine shown in the accompanying illustration Fig. 1, is used for raising the nap on hosiery, sweaters, knit garments and single pieces of any kind. It is built by the Maschinenfabrik Arbach, at Reutlingen, Germany, and A. W. Buhlmann, 200 Fifth Ave., New York, is the sole American agent and is now introducing it to the American market. This fleecing machine, known as raising machine "D", consists of a cylinder covered with wire clothing upon which the goods to be fleeced are placed. The goods pass between the revolving cylinder and the screen, means being provided for adjusting the pressure of the goods against the napping surface so as to give the finish desired. The speed can be varied to meet different



A FLEECING MACHINE FOR HOSIERY, SWEATERS AND PIECE GOODS

conditions and there is an arrangement by which the borders of garments are passed through the machine without being fleeced. The machine produces a wooly, uniform

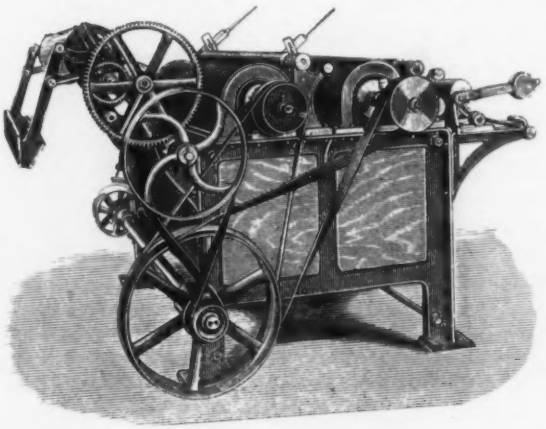


FIG. 2 A DOUBLE RAISING MACHINE WHICH IS ADAPTED FOR PIECE GOODS

fleece at one passage and an experienced operator can easily handle one thousand stockings per day. The machine is solidly built and of simple construction and as a result requires very few repairs. It is sold at a reasonable price which puts it within reach of any knitting mill. There are at the present time three hundred of these machines in operation in different mills throughout Europe and a number have been sold in this country within a few weeks.

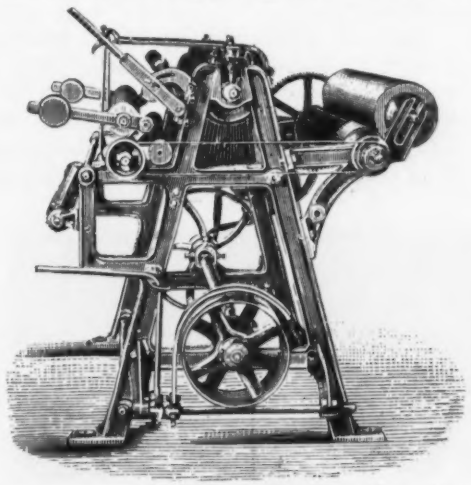


FIG. 3. A SINGLE RAISING MACHINE FOR PIECE GOODS

Fig. 2 shows a double raising machine, "B", which is adapted for piece goods. The pieces are fleeced on both sides at one passage, the nap being uniform, all streakiness being avoided by means of an improved regulating device. Among the advantages of this machine are the uniform and thick nap raised; the large production, great durability, small amount of power required, reliability of lubrication, noiseless running and strong construction.

Fig. 3 shows a single raising machine, "C", for piece goods, the fleece being raised on only one side at one passage through the machine, otherwise the results are the same as obtained with machine "B" already described. A large number of both the single and double raising machines, "B" and "C", are in operation in European mills.

In addition to the machines just described, the Maschinenfabrik Arbach build a special raising machine, "SA", adapted for tubular goods; a double cylinder raising machine, "DTR", for napping and felting knit goods on both sides at one passage.

Full information concerning any of these machines can be obtained on application to Mr. Buhlmann.

KNITTED SASHES AND GIRDLES

BY RUTHVEN

One of the best selling novelties during the past season, made on the flat knitting machine, are the wide, multi-colored sashes and girdles used in conjunction with the plaid suitings, house dresses and evening gowns. They are made in various widths and lengths, ranging from two to six inches in width and from 1 to 2 1/4 yards in length. They are finished with hand knotted, knitted or woven fringes or tassels as desired.

Fig. 1 shows a fancy sash made on the flat knitting machine. The ground of the sash is composed of six ends of 150 denier artificial silk and two ends of 2/40s mercerized yarn, shot back and forth between a series of vertical stitches composed of 4 ends of artificial silk. These stitches bind the ground to the face of the sash, which in turn is composed of a number of horizontal

movements known as slings, each sling containing eight ends of 150 denier artificial silk slung between the stitches. This number is cut in 2 and 2 1/4 lengths, 4, 5 or 6 inches wide and are finished, as shown in illustration, with a hand knotted fringe made up of 24 ends of 2 ply artificial silk.

FIG. 1. A FANCY SASH MADE ON A FLAT KNITTING MACHINE

Fig. 2 shows a fancy girdle, used extensively in solid colors with shepherd plaid suitings. It is also used as a sash with alternate-colors, as black, blue, royal, green and red, and is composed of alternate rows of 2 ends of corkscrew or spiral yarn and ten ends of 150 denier artificial silk, the stitches being 1 end of 2/40s mercerized yarn. This is sold by the yard for girdles and is cut in 2 and 2 1/4 yard lengths for sashes and finished with fringe or tassels as desired.

FIG. 5

Fig. 3 is a reproduction of an imported French sash made on hand looms and has been one of the season's best sellers. It is known as the Bulgarian sash and is used where a sash of heavier weight is desired. It is finished with a heavy tassel composed of 2 ply artificial silk with all the colors shown in the body of sash shown in the tassel. This design has a solid back of 1 end of 2/20s mercerized yarn and 3 ends of 150 denier artificial silk. The face of the

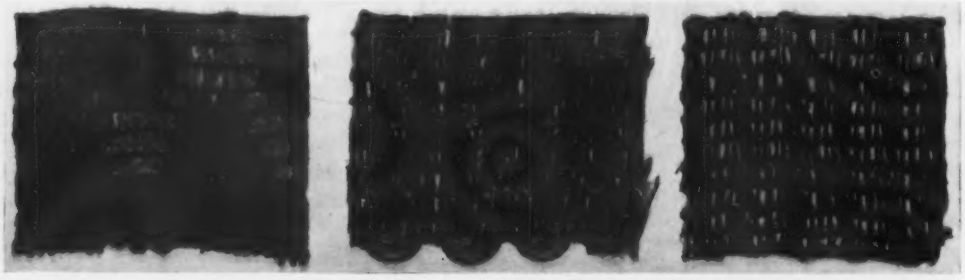


FIG. 2 FIG. 3 FIG. 4

sash contains 29 rows of 10 ends each of 2 ply artificial silk twist, which is bound to the backing by a series of vertical stitches composed of 2/20s mercerized yarn. This pattern is also made in solid colors and stripes, the stripes showing four of light and dark contrasting colors, making a zigzag effect across the face of the sash.

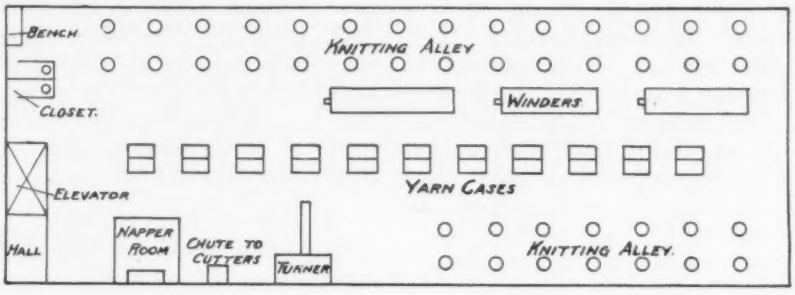
Fig. 4 is a design used principally for girdles where a sash of very light weight is required, and is made and sold in the Bulgarian colors. This, like the designs shown at Figs. 1, 2 and 3 are cut 2 and 2 1/4 yards long and 3, 4, 5 and 6 inches in width. This sash is finished with a fringe made on the flat knitting machine. The fringe shown at Fig. 5 is composed of 6 ends of 2 ply artificial silk, shot continually back and forth. The various colors are spaced about 1/2 inch apart, the fringe measuring 4 inches, including the heading, the whole making a very light weight fringe.

Figs. 3 and 4 are being sold by manufacturers of millinery trimmings in 2-inch width for bands on hats. They are also finished with small 3-inch fringes and tassels of various colors.

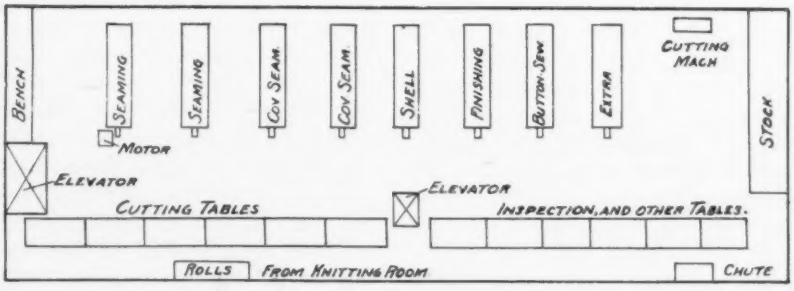
PLAN OF AN UNDERWEAR MILL

BY TRENTON

The idea of manufacturing goods in a knitting mill with the least possible handling has been worked out by one of the largest manufacturers in the business. I have been through nearly every ribbed underwear mill in the country, and consider the new mill a model of its kind. The goods go through the mill like clock work with as few handlings and through as few hands and frames as possible. The illustration shows the layout of the knitting and finishing rooms. The knitting frames are in a double alley on the sunny side of the room. The sizes are arranged to have the largest frame at one end and arranged by sizes until the smallest



KNITTING ROOM



FINISHING ROOM.

PLAN OF AN UNDERWEAR MILL

is at the other end of the room. The winders are set near the knitting frames so the operator can get the yarn by going a very few steps. There is very little winding done these days, so a space is allowed almost the length of the room for cases of yarn on cones. These cases are handy to the frames and the winders. This particular mill runs about thirty kinds of yarn and has about forty cases in all in the knitting room at one time. These cases are set in pairs with a space between, which is the best method I know of.

The napper is in an enclosed room to keep the dust from blowing away. Fans are arranged to suck the flyings into a box that has burlap sides, and the flyings are collected in sacks when the boxes are full. The cloth turner is near and the rolls for the napper is thrown through a sort of trap-door into the napping room. This door has hinges at the top and the weight of the roll opens it, closing after each roll goes through. There is a chute from both the turner and napper that leads to the rack behind the cutter tables on the floor below. There is also another chute that goes to the bleach and wash room. This room is 100 by 60 feet.

There are about 70 knitting frames. A few of these are in a separate row, as will be seen by the plan. There is room left to expand if necessary. The machines are run by electricity, three motors doing the work, 10 h. p., 5 h. p. and 3 h. p. respectively. The motors run about 2800 r. p. m., so a counter shaft is needed in each case to reduce the speed. The motors are bolted to the ceiling and endless belts are used instead of laced belts.

The finishing room is certainly the smoothest running affair I ever saw. There are no goods lying around in bins or boxes nor are the tables filled. The goods go from table to table in a basket and when the baskets arrive at the tape tables they were practically finished. The tables are arranged crossways of the room, 12 machines to a table, six on each side, and are run by a 2 h. p. motor, connected by a noiseless chain belt. One side of the room is taken up by a long row of tables, one end for cutters and the other for various other purposes. The alleyway is of ample width. There is a large stock room at one end for thread, tape, buttons and other supplies. A cutting machine for button stays and facing is in a corner near the turner that turns the stays. The finished goods are thrown down a chute to the packing room.

The wash and bleach room is in the basement connected by an elevator with the finishing room. This small elevator brings the goods to the cutting table as the chute from the knitting room did.

The office occupied the front part of the first floor. The other part is used for packing and shipping. All the latest improvements are installed, from the "Ideal" case lifter to a new style of quick stencil. A large back platform with overhanging roof is sometimes used as an extra room on rush days. There is not much washing or bleaching done, but the equipment is up to date. two men doing what it would have taken four to do with old style tubs and boilers.

IMPROVEMENT IN HOSIERY MANUFACTURE

E. A. Hirner, of the Excelsior Knitting Machine Co., also president of the Novelty Hosiery Co., Allentown, Pa., has recently perfected a knitting machine for knitting what is known as the "Hirner Fashioned Foot" on an automatic seamless machine.

The new feature is intended to make a better fitting foot and ankle without stretching or wrinkling over the instep. The foot of the stocking emerges from the leg at approximately right angles in its natural position without being boarded. This is gained through an extension of the material from the heel by a patented device.

The foot is so attached that the lower part, which would come below the top of a low shoe may be knit with white or different colored yarn, or a cotton foot can be attached to a silk leg.

At the present time this improvement will be used for silk hosiery solely by the Novelty Hosiery Co., whose selling agents are Hinchman, Vezin & Co., of New York, but the manufacturing rights to make other goods to retail for 25 cents will be sold to other manufacturers.

Dyeing, Bleaching, Finishing, Etc.

BACK FILLING COTTON PIECE GOODS

BY DEMAIN

I was interested in the article by "Palma" on the back filling of cotton goods, but think an improvement could be made on the arrangement of the machines. The two bowl mangle is one of the best machines in the starching room, if kept in good order, and should be used for such goods as sateens, pocketings, drills, towelings, cambrics, linings, sheetings and shirtings. There is also the two roll friction mangle made of one brass and one wood roll, the brass on top and the wood on the bottom. This friction mangle should be used for such goods as window shades, bookcloths, hollands, buckrams, etc., and goods that are very heavy and starched twice. The friction is put on this mangle at about one to four, that is, the brass roll on top will go four times as fast as the bottom roll made of wood. The friction mangle is the best starching machine for heavy goods and is a very good mangle if well taken care of. Starches often have the top roll on the starching machines covered with cloth. I do not think this is a good plan, for it has been my experience that good starching will not result. As soon as the cloth is removed and the bowls turned down in the bath better work is the result.

There are many overseers who do not know how to contend with the difficulties in the starching room. A man should not be put in this department who does not understand what the different materials in the finishing works are for and when and how to use them. If the goods are not prepared right in the starching room a good finish cannot be had. I know many a starcher who has no knowledge of the materials used for finishing and starching. There are the different kinds of starches, disinfecting, weighting materials, stiffenings, gums, blues, softeners, fireproofing materials, waterproofing materials and fillers; filling materials such as calcium, carbonate, magnesia, sulphate, various silicates and barnum sulphate; stiffening materials such as starches, dextrines, gelatines, glue, casein, gums, algin, preparations of Irish moss and Iceland moss, and carnauba wax; softening materials such as soap, oils and waxes; blueing materials such as ultramarine, smalts, Prussian blue and aniline dyes; antiseptics such as borax, copper, salts, boric acid, phenol, zinc compounds, formaline; waterproofing agents such as oils, gelatines, tannate, formaline, paraffin wax, insoluble soaps, ceresin and rubber solutions; fireproofing materials such as tungstates, phosphates, borates and silicates.

The back filling machine is placed in a room where there are no other machines so that the goods will not be all starch or clay dust. The best arrangement is to have the backfiller, frame and cans connected to run at the same speed. When the goods come from the backfiller they go to the frame where they are stretched and partly dried. They are then put on the drying cans and thoroughly dried. When backfilling white goods, ultramarine is a good blue to use. When colored goods are being filled it is better to have the starch the same color as the goods. Some finishers backfill their goods and run them on the cams or drying machines. This is not a good plan, but if there is a cavity can in the bleachery connected to the backfiller it is a good plan to run the goods from the filler to the cavity can. This cavity can is really a drying can, 18 to 20 feet in diameter; the unstarched side goes against the can and the filled side is on top so the filling will not stick to the cans. Still another method of backfilling is to have the top of the machine made up of heated cans and the bottom made of wooden winches, so that when the filled cloth comes off the filled side will go against the wooden winches and the side which has no filling will go against the heated cans. It is not a good plan to have a filler connected to the drying cams because the filling sticks to the cans. Sandpaper should not be used on cans and

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I was interested in the article by "Palma" on the back filling of cotton goods, but think an improvement could be made on the arrangement of the machines. The two bowl mangle is one of the best machines in the starching room, if kept in good order, and should be used for such goods as sateens, pocketings, drills, towelings, cambrics, linings, sheetings and shirtings. There is also the two roll friction mangle made of one brass and one wood roll, the brass on top and the wood on the bottom. This friction mangle should be used for such goods as window shades, bookcloths, hollands, buckrams, etc., and goods that are very heavy and starched twice. The friction is put on this mangle at about one to four, that is, the brass roll on top will go four times as fast as the bottom roll made of wood. The friction mangle is the best starching machine for heavy goods and is a very good mangle if well taken care of. Starches often have the top roll on the starching machines covered with cloth. I do not think this is a good plan, for it has been my experience that good starching will not result. As soon as the cloth is removed and the bowls turned down in the bath better work is the result.

There are many overseers who do not know how to contend with the difficulties in the starching room. A man should not be put in this department who does not understand what the different materials in the finishing works are for and when and how to use them. If the goods are not prepared right in the starching room a good finish cannot be had. I know many a starcher who has no knowledge of the materials used for finishing and starching. There are the different kinds of starches, disinfecting, weighting materials, stiffenings, gums, blues, softeners, fireproofing materials, waterproofing materials and fillers; filling materials such as calcium, carbonate, magnesia, sulphate, various silicates and barnum sulphate; stiffening materials such as starches, dextrines, gelatines, glue, casein, gums, algin, preparations of Irish moss and Iceland moss, and carnauba wax; softening materials such as soap, oils and waxes; blueing materials such as ultramarine, smalts, Prussian blue and aniline dyes; antiseptics such as borax, copper, salts, boric acid, phenol, zinc compounds, formaline; waterproofing agents such as oils, gelatines, tannate, formaline, paraffin wax, insoluble soaps, ceresin and rubber solutions; fireproofing materials such as tungstates, phosphates, borates and silicates.

The back filling machine is placed in a room where there are no other machines so that the goods will not be all starch or clay dust. The best arrangement is to have the backfiller, frame and cans connected to run at the same speed. When the goods come from the backfiller they go to the frame where they are stretched and partly dried. They are then put on the drying cans and thoroughly dried. When backfilling white goods, ultramarine is a good blue to use. When colored goods are being filled it is better to have the starch the same color as the goods. Some finishers backfill their goods and run them on the cams or drying machines. This is not a good plan, but if there is a cavity can in the bleachery connected to the backfiller it is a good plan to run the goods from the filler to the cavity can. This cavity can is really a drying can, 18 to 20 feet in diameter; the unstarched side goes against the can and the filled side is on top so the filling will not stick to the cans. Still another method of backfilling is to have the top of the machine made up of heated cans and the bottom made of wooden winches, so that when the filled cloth comes off the filled side will go against the wooden winches and the side which has no filling will go against the heated cans. It is not a good plan to have a filler connected to the drying cams because the filling sticks to the cans. Sandpaper should not be used on cans and

there is no need of using cocoanut oil if the backfiller is used in the manner stated above, that is, with the cavity can or drying machine made up with a wooden winch and heated cans.

The backfilling machine should be kept in good order and the doctors kept level and clean. There are two doctors on the backfiller, one to clean the starch from the goods coming from the filler, and the other to keep the bowl clean for the in-going cloth. Sometimes a rubber doctor is used to keep the bowl clean instead of a brass doctor.

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AGFA SOAP

The Berlin Aniline Works, 213 Water St., New York, have placed on the market a new sulpho-derivative of castor oil, which is sold under the name of "Agfa soap." It is a hard soap similar in appearance to a high grade curd soap, but with new and very important qualities for wetting and boiling out goods, bleaching, dyeing and printing, softening and printing, washing and fulling, sizing and dressing.

The special claims for this soap by the manufacturers are as follows: Certain castor oil products are remarkable for their extraordinary wetting-out properties. With "Agfa soap" it is possible to obtain a complete saturation even in cold or luke warm water. It opens the threads, penetrates them quickly and easily, and frees them of dirt without damaging the texture. The fibers, the threads and the fabrics gain in elasticity, strength and weight, the latter to about 2.5 per cent. The bleached goods treated with "Agfa soap" are remarkable for their perfect whiteness, and also for their closeness of texture. The "Agfa soap" protects the fiber of certain materials from being too strongly attacked by boiling and bleaching liquids. The whole bleaching process is accelerated.

By using "Agfa soap" the time required for the boiling-out process is, on the average, shortened by one-half. According to the state of the material, 1/2 to 1 1/2 lbs. of "Agfa soap" to 100 lbs. of goods, and from 4 to 6 lbs. of alkali is used.

The process is equally applicable for loose material, piece goods, cops, bobbins or skeins. The manner of working varies in nearly every bleach works. It does not make any difference whether the process takes place under pressure or in the open kier.

"Agfa soap" is lime-proof, that is, it is not decomposed by the action of lime. It is especially advantageous when used with Naphtol preparations for producing developed colors, and also in the Turkey red dyeing process in place of Turkey red oil. The blue or the yellow tinge can be obtained, as desired. "Agfa soap" can also be mixed with the dye liquor and in such a case does away with the otherwise necessary preparatory wetting out. It gives a deep and bright shade, and gives the goods an agreeable soft feel without any smell.

As a softener it produces a soft, but not a smeary or greasy finish. This is especially noticeable in goods dyed with sulphur dyes. The softening baths can be used again. On an average a 3 per cent. solution of "Agfa soap" is enough; this can be made stronger or weaker according to requirements.

In finishing and scouring woolen and worsted goods "Agfa soap" has the property of transforming oils and fats, especially mineral oils, into emulsions. It loosens the dirt which is then easily scoured out; even with water, it does not form lime soap.

In sizing and dressing it may be used in combination with other preparations and in small quantities it gives the goods a soft and smooth finish. It is an excellent medium for binding China clay and salts of all kinds. It is employed in the usual manner.

The advantages of this soap are summarized by the manufacturers as follows: It is perfectly neutral; it is not hygroscopic and does not dry out, consequently it remains unchanged even when stored for a great length of time; it dissolves readily in hot water, producing a solution which remains clear on cooling; solutions of from 2 to 3 per cent. will mix with not only small quantities of mineral acids, but with any proportion of organic acids, such as formic acid, acetic acid, etc., which are not frequently used in dyeing;

it does not form lime soap even with the hardest water; it combines with certain quantities of solutions of salts, such as magnesium-sulphate or chloride of magnesium; as a result of these properties it is claimed that the use of "Agfa soap" results in much brighter and faster colors.

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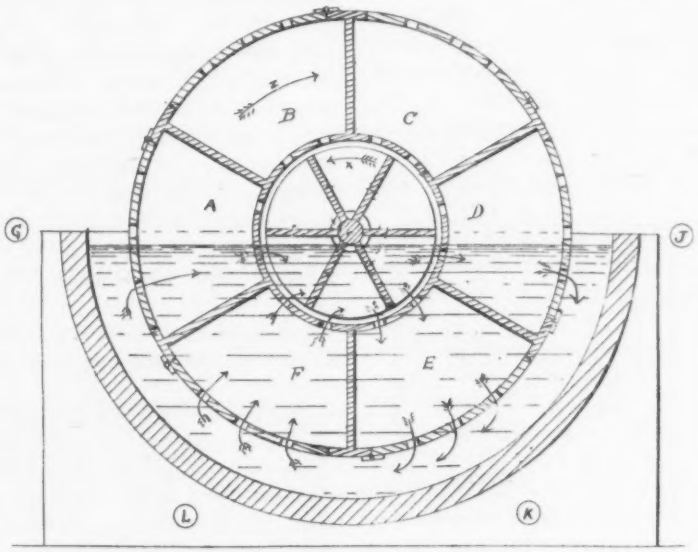
A CIRCULATING DYEING MACHINE

An improvement in the method of dyeing for which a patent has recently been issued to Smith, Drum & Co., 2503 Coral St., Philadelphia, Pa., is described as follows: The process consists in agitating the dye liquor in a vat at a point near the surface and in moving the goods to be dyed in a circular path around the point of agitation, into and out of the dye liquor so as to cause the liquor to pass first in one direction through the goods and then in the reverse direction. The object is to penetrate and impregnate the goods thoroughly with the dye liquor, and without the usual knotting of the goods.

The apparatus employed consists in a vat which contains the dye liquor. The bottom of the vat is semi-circular in cross section and between this bottom and the wall of the carrier for the goods is sufficient space for free circulation of the dye liquor. The carrier comprises the outer wall and an inner concentric wall. Both of these walls are perforated and are suitably connected to circular, solid end walls and partitions. The latter divides the carrier into compartments, A, B, C, D, E and F. The end walls of the carrier are journaled on a shaft, and the carrier is rotated in the direction indicated by the arrow, Z.

Radiating from the shaft are solid blades, which with the end walls serve to circulate the liquor. The shaft and agitator are rotated in the direction indicated by the arrow, X; that is, in a direction reverse to that in which the carrier rotates.



A CIRCULATING DYEING MACHINE

The carrier and agitator are rotated as indicated by the arrows, the vat being previously filled with dye or other liquor. The goods to be dyed are compacted into the compartments, A, B, C, D, E and F, but left loose enough not to interfere with the free passage of the dye liquor. When the compartment, A, is at the zone, G, the compartments, F, E and D, are at the zones, L, K and J, respectively, and all submerged or partly so in the dye liquor. The agitators, rotating in the direction of the arrow, X, draw the dye liquor through the compart-

ment, A, from the exterior to the center of the carrier, as indicated by arrows. From the center, the agitators draw the dye liquor through the compartment, D, to the exterior of the carrier as indicated by the arrows. The perforated walls of the compartments permit this circulation.

The agitators draw the dye liquor through the compartment, F, from the exterior of the carrier to the center of the carrier; and force the dye liquor from the center of the carrier through the compartment, E, to the exterior of the carrier. This circulation of the dye liquor by the agitator is confined to the paths indicated, by the end walls and partitions, which in the main should be solid. The circulation of the dye liquor is best when one of the partitions becomes located in the vicinity of a medial line between the zones, L and K, as shown. When so located, the partition offers an obstruction around which the dye liquor is compelled to flow, maintaining a continuous circulation of the liquor from left to right in the upper portion of the vat and from right to left along the bottom wall of the vat.

The dye liquor from the compartments, A, B, C and D, or the portions not submerged, drains into the central chamber of the carrier, except for a small portion that escapes through the exterior walls. As the carrier slowly rotates to bring the compartments, F, E, D, and C, adjacent the zones, G, L, K and J, respectively, the dye liquor circulates from the carrier exterior through the compartments, F and E, to the carrier center, and from the carrier center through the compartments, D and G, to the exterior carrier. The dye liquor in the vat between the carrier and vat bottom flows continuously in one direction from the zone, J, to the zone, G. From the zones, L and G, the dye liquor flows from the exterior of the carrier to the center, and from the center toward the zones, J and K. At certain points the line of flow will not be exactly as described and illustrated, as there will be certain eddy currents tending to break the direct flow at certain points, but in general the circulation of the dye liquor will be as stated, and the bulk of the liquor will take the paths of flow indicated.

BLEACHING LACE CURTAINS

BY HECTOR

A number of years ago I was employed in the bleaching and dressing department in a large lace curtain mill in Nottingham, Eng. It was an old style bleaching and dressing plant that had been running for a number of years. The part I was to take charge of was an addition to the old one. After running the annex for some time I learned that the old methods had certain advantages over the new. The goods were boiled in kiers, then put in bleaching tanks and then washed in dolly washers or tom-toms. They were then put in the soak tank, lifted out and put in the dolly washer again to be washed off, soaped and washed off again. This process looked very slow to me, but the goods came out all right. For the starching and drying they had the old style frames. There were two of them made to take 300 inches in width. I found the old style dressing frames had certain advantages over the tenter frames. When it came to what is called the combination, the old frames could get the goods off straight. I made it a point to have all the goods that were difficult to manipulate on the new system made full width and dried on the old frames. The work came out right, and the mill overseer, being a very busy man, did not notice the weak points of the new system, but on the contrary was much pleased with it. I would advise anyone starting up in the bleaching of lace curtains to adopt the old method. It does not cost so much and the results are more satisfactory. It is my experience that in order to have a satisfactory layout both the old and the new methods should be employed. The old system is generally used for Lever lace, as this cannot be handled by the new process.

In tinting goods I have found it better to have a mangle set apart for this work. No matter how light the tints are, when it comes to washing, the mangle and running the risk of spoiling the first lot of white goods run after the tinting, it will be found that a special mangle is the cheapest.

I prefer the cylinder tenter. Some think this method is too slow as compared with

the open tenter, but I have found that the cylinder tenter gives the help more time to straighten out the goods, after which they do not need calendering. Goods that have been weighted cannot be put into a cylinder tenter because the weighting mixture sticks to the cylinders; this must be done either on an open tenter or old style frames. Goods of low quality need some weighting. I have weighted goods in England and have no doubt but that this method will be resorted to in America. Before the goods leave the finisher's hands they are supposed to be weighted correctly.

THE DYEING OF WOOL FABRICS

BY B. F. SADLER

In the Dyer and Calico Printer

The one-dip logwood blacks, which at one time were much used, appear to have completely gone out now that so many aniline dyes are available, but logwood applied as a mordant dye still holds its own. The shades of the artificial blacks now on the market are much superior to the earlier ones which came out, where the tone was always inclined to be either green and flat, or else an

FIG. 1

unpleasant red. As regards fastness many of them are much superior to logwood, but none of them feed the material, while the majority leave all burls a staring white, which is a fault common to most artificial wool dyes of the acid group.

For the dyeing of fast mode shades upon cloths for men's wear, the Salicine colors give extensive range of combinations, and with these, which require after-chroming to develop the shade, smoke and pearl greys, fawns, olives, and browns of all shades can be dyed. In the case of union cloths of cotton and wool, a number of direct cotton colors dye both fibers a uniform shade in one bath, but where the wool is composed of shoddy or mungo, these materials absorb the dye faster than new wool. In these cases the difficulty can be got over by choosing a dye with a stronger affinity for the cotton than the wool. The following are some direct colors suitable for unions, dyeing both fibers nearly the same shade in a neutral bath containing Glauber's salt, and possessing a greater affinity for the vegetable fiber: Benzo Fast Blue Scarlet 4 B S, Direct Yellow R R extra, Benzo Chrome Blue Black B, Benzo Fast Blue B, Benzo Dark Brown extra, Benzo Violet R, and Pluto Black C R, F extra.

In using a single bath for unions, the liquor must be kept in a concentrated form,

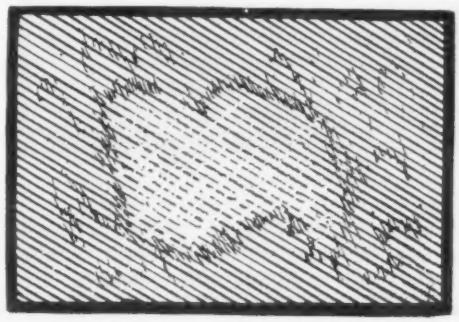


FIG. 2

and by regulating the temperature the dyeing of either cotton or wool can be accelerated. At the boil, the wool will of course absorb more dye than the cotton, and in a cooling bath the reverse takes place to some extent. In nearly all cases the cotton should be dyed a shade or two darker than the wool, as this makes the cotton much less in evidence, and the following colors dye the cotton heavier shades than the wool in a neutral bath: Chlorazol Dark Blue B extra, Chlorazol Fast Yellows, Sultan Scarlet 3 B, F, Titan Blacks and Titan Orange. For union blacks the old style of tannin and iron liquor is still in favor, as it stiffens out and feeds the cloth which the others do not.

The number of stains in finished cloth is

legion—some easily accounted for, while others afford no clue whatever as to their origin; and what are termed broadly dyers' stains in 90 per cent. of cases should be labeled makers'. Fig. 1 illustrates a fault which at times develops in weighted cloths, where the filling has crystallized on the face of the material—or, as the term goes—"has candied". This is most likely to happen where a filling has been used containing a non-deliquescent salt such as Epsom or Glauber's salt, and it shows itself by white markings of irregular shape, all over the fabric. It is generally seen where damping has either been omitted previous to press-

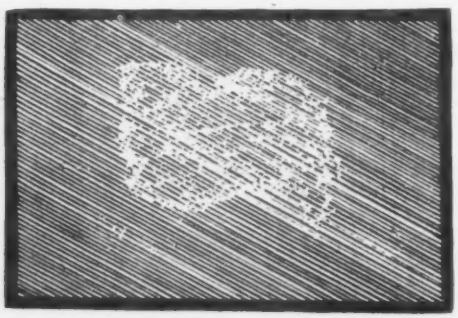


FIG. 3

ing, or where the amount of damp given has been insufficient, and if the weighting agent has been of a highly deliquescent nature damping will cause it to disappear at once. When, however, the filling contains salts which have little affinity for moisture, such as those mentioned above, the only cure is to wash the piece out again.

Fig. 2 illustrates the appearance of mildew upon a grey undyed cloth, and Fig. 3 the same cloth after dyeing. Fig. 2 represents the stain in a white cloth, where the mildewed portion is a whiter shade than the rest of the material, which is yellowish; this white portion is usually surrounded by darker markings which fade away imperceptibly at the edges. In Fig. 3 the fabric is shown dyed, and the stain is now the same shape but a grey color, many shades lighter than the bulk of the cloth, while the dark bordering marks have now disappeared. Warm weather and humid conditions always favor mildew growth, which is of course a minute form of fungi, developed from spores which are always floating about in the air, and the growth feeds upon the size or whatever impurities there are in the cloth but eventually attacks the fibers themselves. Once developed there is no cure, as the structure of the fiber is altered and its affinity for dye is much lessened, while in bad cases the parts affected are tendered. If, however, the disease is caught in the incipient stage, the mildew can be arrested without any harm to the cloth; but, unfortunately, the earlier stages of growth are hardly visible, and only become evident when the mischief is done. One sure sign of its approach is the cloth beginning to smell musty, and when this happens the best treatment is to dye it up at once—or at any rate give it a boil in a bath of water slightly acidulated.

BLEACHING COTTON GOODS

Editor Textile World Record:

I would like to make a suggestion regarding the reply to "Clayton's" (2203) inquiry which appeared in the October issue. I would suggest that "Clayton" handle his heavy goods that require either bleaching or dyeing, as follows:

1st. Run through hot water to which has been added 1 per cent. of oleine oil and then through a cold water bath;

2nd. Sour at 1° Tw. with muriatic acid and allow to stand over night, taking care that the outside of the pile does not dry. The next day wash well through machines and run into a boiling kier and boil with the following solution:

1 lb. caustic soda,
2 lbs. soda ash,
¼ lb. silicate of soda.

Boil for 12 hours if the circulation is by steam, but if a centrifugal pump is attached the time can be reduced to 8 hours. There will then be a good bottom for the bleach, and will require a very weak bleaching liquor, say as low as 1/2° Tw. Work about 3 hours. Then wash and sour at 1° Tw. with muriatic acid and wash again. "Clayton" will then have a good bleached cloth without having to boil twice. Parma.

Dye Recipes

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 145

TAN ON WORSTED DRESS GOODS

Tan on 100 lbs. worsted dress goods. Prepare dye bath with

158 grs. Amazo Blue.
1 oz. 67 grs. Amazo Brill. Red 2 B.
3 ozs. Amazo Fast Yellow L R.
14 grs. Amazo Fast Pink Y.
(American Dyewood Company, 80 Maiden Lane, New York, N. Y.)
10 lbs. Glauber's Salt.
2 lbs. Oil Vitriol.

Enter at 120° F., bring to a boil in 20 minutes and boil one hour.

The above colors are suitable for all classes of wool dyeing because of their level dyeing properties and good fastness to light.

Recipe No. 146

GREY ON WORSTED DRESS GOODS

Grey on 100 lbs. worsted dress goods. Prepare the dye bath with

1⅗ ozs. Amazo Blue.
1 oz. 53 grs. Amazo Brill. Red 2 B.
336 grs. Amazo Fast Yellow L R.
(American Dyewood Company, 80 Maiden Lane, N. Y.)
10 lbs. Glauber's Salt.
1½ lbs. Oil of Vitriol.

Enter at 120° F., bring to a boil and boil 3/4 to one hour.

The colors used to produce this grey have excellent levelling properties and are recommended for all classes of wool dyeing.

Recipe No. 147

BROWN ON WORSTED YARN

Anthracene Chromate Brown B G on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Anthracene Chromate Brown B G
(Cassella Color Co., 182 Front St., New York. N. Y.)

which has been well dissolved. Bring bath to 140° F., then add

1 lb. Potassium Bichromate (previously dissolved).

Enter yarn at this temperature, raise slowly to a boil, and dye at a boil for 1 3/4 hours. For heavy dyeings which do not exhaust well, add after one hour's boiling

3 lbs. Acetic Acid.

Anthracene Chromate Brown B G may also be applied as an after-chromed and straight mordant color. It possesses excellent fastness in all respects.

Recipe No. 148

SCARLET ON COTTON YARN

Azidine Fast Scarlet E 7 B S on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Azidine Fast Scarlet E 7 B S.
(C. Bischoff & Co., 451 Washington St., New York, N. Y.)
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour. Azidine Fast Scarlet E 7 B S gives a brilliant red of very good fastness.

Recipe No. 149

YELLOW ON SILK

Carbozol Yellow W on 100 lbs. of silk. First mordant the boiled off silk in a bath containing

60 lbs. Alum (free from Iron).
6 lbs. Soda Crystal.
125 gals. Water.

Work in this liquor for 1/4 to 1/2 hour, then allow to steep 12 hours (over night). Then wring the silk without rinsing, work for 1/4 hour in a

1° Tw. Silicate of Soda Solution.

Thoroughly rinse and dye without drying in a bath of boiled off liquor containing

4 lbs. Carbazol Yellow W
(Badische Co., 86 Federal St., Boston, Mass.)

which has been slightly acidified with acetic acid. Raise slowly to a boil, and dye for one hour at a boil. Rinse well and if desired soap, and brighten slightly.

Carbazol Yellow W when applied on a chrome mordant will be found much faster, but at the same time duller than on an alum mordant. It may also be dyed upon unmordanted silk, but dyeings thus produced lack the brilliancy of the alum mordant.

Recipe No. 150

RED ON WORSTED YARN

Guinea Fast Red B L on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Guinea Fast Red B L.
(Berlin Aniline Works, 213 Water St., New York, N. Y.
20 lbs. Glauber's Salt (Crystals).
4 lbs. Sulphuric Acid.

Enter at 140° F. and dye at a boil for one hour.

Guinea Fast Red B L possesses extraordinary fastness to light, and good fastness in most other respects.

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Recipe No. 151

ORANGE ON WORSTED YARN

Sulphon Orange 5 G on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Sulphon Orange 5 G.
(Bayer Co., 117 Hudson St., New York, N. Y.)
10 lbs. Glauber's Salt.
3 lbs. Acetic Acid.

Enter at 140° F. and dye at a boil for one hour, and exhaust if necessary by adding a little sulphuric acid.

Sulphon Orange 5 G is very fast to alkali, washing, milling, steaming and stoving. It may be used in shading chrome colors. Cotton effects in woolen pieces remain perfectly clear.

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Recipe No. 152

FANCY COLORS ON COTTON PIECE GOODS

This sample contains the following colors:

	%
Light Mode:	
Thio Indigo Brown G Paste	0.20
Thio Indigo Blue 3 G N Powder	0.08
Light Pink:	
Thio Indigo Rose A N Paste	0.40
Light Blue:	
Indigo K G Paste	1.60
Grey:	
Thio Indigo Grey 2 B Paste	9.00
Thio Indigo Brown G Paste	1.80
Thio Indigo Orange R Paste	3.60
Brown:	
Thio Indigo Brown G Paste	7.20
Thio Indigo Brown 2 R Paste	3.60
Thio Indigo Blue 3 G N Powder	0.20

(Kalle & Co., 530 Canal St., New York.)

Method for Reducing the Colors

Thio Indigo Orange R Paste:
10 lbs. Dyestuff Paste.
1 lb. Caustic Soda 76° Tw.
1½ gals. Water.
1 lb. Soda Ash.
1 lb. Hydrosulphite Powder

diluted to 10 gals. Temperature: 122° to 140° F. Color of the vat: yellow olive.

Thio Indigo Rose A N Paste:
10 lbs. Dyestuff Paste.
4 to 5 lbs. Caustic Soda 76° Tw.
10 to 12 gals. Water.
3 lbs. Puropol.
2 lbs. Hydrosulphite Powder.

Temperature: 140° to 160° F. Color of the vat: olive.

Thio Indigo Brown G Paste:
10 lbs. Dyestuff Paste.
2¾ lbs. Caustic Soda 76° Tw.
3½ gals. Water.
1¼ lbs. Hydrosulphite Powder

diluted to 10 gals. Temperature: 140° to 158° F. Color of the vat: brown.

Thio Indigo Brown 2 R and 5 R Paste:
10 lbs. Dyestuff Paste.
2¾ lbs. Caustic Soda 76° Tw.
5 gals. Water.
1 lb. Puropol.
1½ lbs. Hydrosulphite Powder

diluted to 10 gals. Temperature: 140° to 158° F. Color of the vat: yellow.

Indigo G K Paste:
10 lbs. Dyestuff Paste.
3½ lbs. Caustic Soda 76° Tw.
7½ gals. Water.
2 lbs. Puropol.
4 lbs. Soda Ash.
2 lbs. Hydrosulphite Powder

diluted to 10 gals. Temperature: 122° to 140° F. Color of the vat: brownish yellow.

Thio Indigo Blue 3 G N Powder:
10 lbs. Dyestuff Powder.
1 lb. Puropol.
3½ lbs. Caustic Soda 76° Tw.
3 gals. Water (104° to 122° F. Warm).
1½ lbs. Hydrosulphite Powder

diluted to 10 gals. Temperature: 104° to 122° F. Color of the vat: yellowish brown.

Thio Indigo Grey 2 B Paste:
10 lbs. Dyestuff Paste.
4 lbs. Caustic Soda 76° Tw.
5 gals. Water.
4 lbs. Puropol.
4 lbs. Hydrosulphite Powder

diluted to 10 gals. Temperature: 122° to 140° F. Color of the vat: yellowish olive.

The preparation of a dye vat of 100 gals. is as follows:

Ninety gallons of water, if possible freed from lime by the addition of soda, are run into the vat and this is sharpened by hydrosulphite powder and caustic soda, taking as a rule for light shade a greater quantity of hydrosulphite and caustic soda than is necessary for dark tones.

The additions are:
For light shades about
2½ ozs. Hydrosulphite Powder.
4 to 5 ozs. Caustic Soda 76° Tw.
For medium shades about
2 ozs. Hydrosulphite Powder.
3½ ozs. Caustic Soda 76° Tw.

For dark shades about
1½ ozs. Hydrosulphite Powder.
3 ozs. Caustic Soda 76° Tw.

After 1/4 to 1/2 hour the required quantity of reduced color is added and for deep shades before adding the color 10 to 30 lbs. Glauber's Salt Calc. are put in. The whole is stirred gently and then allowed to stand for a short time, after which the dyeing is commenced at the following temperature (Fahr):

Thio Indigo Yellow G N Paste ..... 77°-86°
Thio Indigo Blue 3 G N Powder ..... 77°-86°
Thio Indigo Orange R Paste ..... 104°-140°
Thio Indigo Rose A N Paste and B N Paste ..... 104°-140°
Thio Indigo Brown G Paste and 5 R Paste ..... 104°-140°
Indigo K G Paste ..... 104°-140°
Thio Indigo Grey 2 B Paste ..... 104°-140°

When dyeing combinations of vat dyestuffs, each color is reduced separately, and in this case the temperature for dyeing is the average of the temperature as given above for the various colors. After dyeing, the goods are wrung as evenly and as well as possible, oxidized by hanging, then rinsed and soaped with about 2/5 oz. soap per gallons, boiling for 1/2 hour. The dye bath exhausts completely in dyeing pale shades.

Recipe No. 153

GREEN ON COTTON PIECE GOODS

	%
Reseda:	
Thio Indigo Yellow 3 G N Paste	2.90
Thio Indigo Blue 3 G N Powder	0.58
Cream:	
Thio Indigo Brown G Paste	0.04
Thio Indigo Blue G N Powder	0.40
Thio Indigo Yellow 3 G N Paste	2.30

(Kalle & Co., 530 Canal St., New York.)

Method for Reducing the Colors

Thio Indigo Yellow 3 G N Paste:
10 lbs. Dyestuff Paste.
4 to 5 gals. Water.
5 lbs. Caustic Soda 76° Tw.
4 lbs. Hydrosulphite Powder

diluted to 10 gals. Temperature: 68° to 86° F. Color of the vat: red.

The method for deducing the other colors mentioned will be found in Recipe No. 152. The method of dyeing will also be found in Recipe No. 152. A special sample card has been issued by Kalle & Co. about these Thio Indigo colors.

Recipe No. 154

BROWN ON COTTON YARN

Thioxine Brown 2 G R on 100 lbs. cotton yarn. Prepare the dye bath with

5 lbs. Thioxine Brown 2 G R.
(Geisenheimer & Co., 189 Front St., New York, N. Y.)
5 lbs. Sodium Sulphide Crystal.
4 lbs. Soda Ash.
20 lbs. Glauber's Salt.

Dissolve dyestuff and sodium sulphide together and add to bath already containing the Glauber's Salts and Soda Ash. Bring to a boil, and dye at a temperature just below the boil for one hour.

Thiozine Brown G R possesses very good fastness to light and washing.

Recipe No. 155

BLACK ON UNION CLOTH

Helvetian Union Black G. Prepare the dye bath with

5% Helvetian Union Black G.
(Swiss Colors Co., 15 E. 12th St., New York, N. Y.)
4% Sal Soda.

Enter at 140° F., allow goods to remain half hour, turn on steam, then add

20% Glauber's Salt,

boil half hour, shut off steam. Allow bath to cool down, steep for one hour, and rinse in three waters.

Helvetian Union Black G is of a jet cast, of excellent covering power, and is especially recommended for union goods, as it dyes cotton, wool and silk absolutely the same shade from one direct bath. Its fastness to light and watering is ideal for quick dyeing methods. One of the many uses that this product is advisable for, is in the complete covering of faded cloths, as it holds its rich, full cast indefinitely.

Recipe No. 156

GREEN ON UNION CLOTH

Helvetian Brilliant Green G on 100 lbs. union cloth. Prepare the dye bath with

2 lbs. Helvetian Brilliant Green G.
(Swiss Colours Co., 15 E. 12th St., New York, N. Y.)
2 lbs. Sal Soda.

Enter at 140 F., allow goods to remain half hour, turn on steam, then add

20% Glauber's Salt,

boil half hour, shut off steam. Allow bath to cool down, steep for one hour, and rinse in three waters.

Helvetian Brilliant Green G is especially noted for its pleasing brilliancy and level dyeing properties, also of good fastness, and covers cotton, wool and silk identically the same shade from one direct bath.

New Machinery and Processes

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to the textile manufacturers. It is not a list of patents but of improvements on the market, the idea being to present to our readers a systematic monthly record of new machinery, etc., of interest to textile mill men.

Whenever possible we endeavor to make a personal investigation of the new machinery and processes described in this department. In the absence of such personal investigation we must necessarily rely upon information obtained from those who control the machines and processes.

We invite machine builders and others to send us such information for this department.

Improvement in Stripping Cotton Cards. Leon W. Campbell, of the Woonsocket Machine & Press Co., Woonsocket, R. I., has recently invented, and the company is now putting on the market, an improved attachment for stripping cotton cards. With the use of this attachment, it is only necessary to strip about one-twelfth as frequently as at present. This results in not only saving time and labor, but also makes a cleaner cardroom and there is just so much less fly and dust in the atmosphere to be inhaled by the operatives. It has also been found by testing that where this device has been used on the cards, the yarn is about 5 per cent. stronger in breaking tests. This is due to the cleanliness of the stock and also to the fact that the light web which follows the stripping only occurs one-twelfth as often as in the old methods. The device may be attached to cards of any make. It has been in operation in several of the leading New England mills for a sufficient length of time to demonstrate its thorough practicability and the advantages outlined above.

Humidifying Apparatus. The G. M. Parks Co., Fitchburg, Mass., have recently placed on the market what is known as the "Turbo cluster tank," which makes it possible to have a small humidifying outfit without an expensive installation. A description appears in this issue.

Fleecing Machines for Hosiery. A. W. Buhlmann, 200 Fifth Ave., New York, is introducing to the American trade a line of raising or napping machines for hosiery and other kinds of knit goods. These machines are built by the Maschinenfabrik Arbach and are in extensive use in European mills. A description of one of them appears in this issue.

Placing Travelers on Spinning Rings. Gebruder Staeubli, Horgen, Switzerland, have placed on the market tools for setting travelers on spinning rings and for removing the travelers from the rings. It is stated that with this apparatus two girls can replace travelers on four hundred rings in six to seven minutes. A description appears in another part of this issue.

Cotton Spinning Device. The Sociedad Anonima Patentes Casablancas, Sabadell, Spain. A new method of spinning cotton yarn direct from slubbing. The intermediate and roving frames are dispensed with. A description appears in this issue.

Bleaching Apparatus. Moritz Freiberger, Charlottenburg, Germany. An apparatus for bleaching and souring piece goods in rope form by a continuous process.

Decorating Fabrics on the Shear. Severin Heusch, Tuchschermesser-Fabrik, Aachen, Germany. A cloth shear for producing stripes on plush goods.

Removing Dust from Card-Rooms. The Vakuumanlagen und Apparatebau-Gesellschaft, Frankfurt-on-Main, Bockenheim, Germany. An improved vacuum apparatus for removing dust from carding machines.

Open Width Bleaching Process. Emil Gminder, Wernerstrasse 26, Reutlingen, Germany. An improved machine for bleaching goods in the open width, for which a number of important advantages are claimed.

THE GILES DYEING MACHINE FOR SKEIN YARN

Textile manufacturers have long been familiar with automatic machines for dyeing yarn in the skein, which supplanted the laborious and unsatisfactory hand method of dyeing in open tubs and handling the skeins by hand. The advantages of the machine over hand work are so well known that it is unnecessary to state them here, but manufacturers will be interested in the new automatic machine shown in the illustration, Fig. 1, which has been designed with the object of embodying in the machine process all the improvements that have been developed by experience. This machine is the product of the John H. Giles Dyeing Machine Co., Amsterdam, N. Y., and built in the shops of the Mason Machine Works, Taunton, Mass., where a representative of this magazine recently examined a completed machine as well as a number in process of construction to fill orders.

One of the improvements claiming immediate attention is in the mounting and operation of the dye sticks. Fig. 2 is a view of one of the ratchets, which is made extra heavy and designed so that it can be moved only in one direction, an escapement preventing any reverse motion. The star wheel is pinned to the ratchet-cup instead of being screwed on, the ratchet cup having a 2 11/16 inch bearing. In the double machine the ratchet cups are set in the center, making it

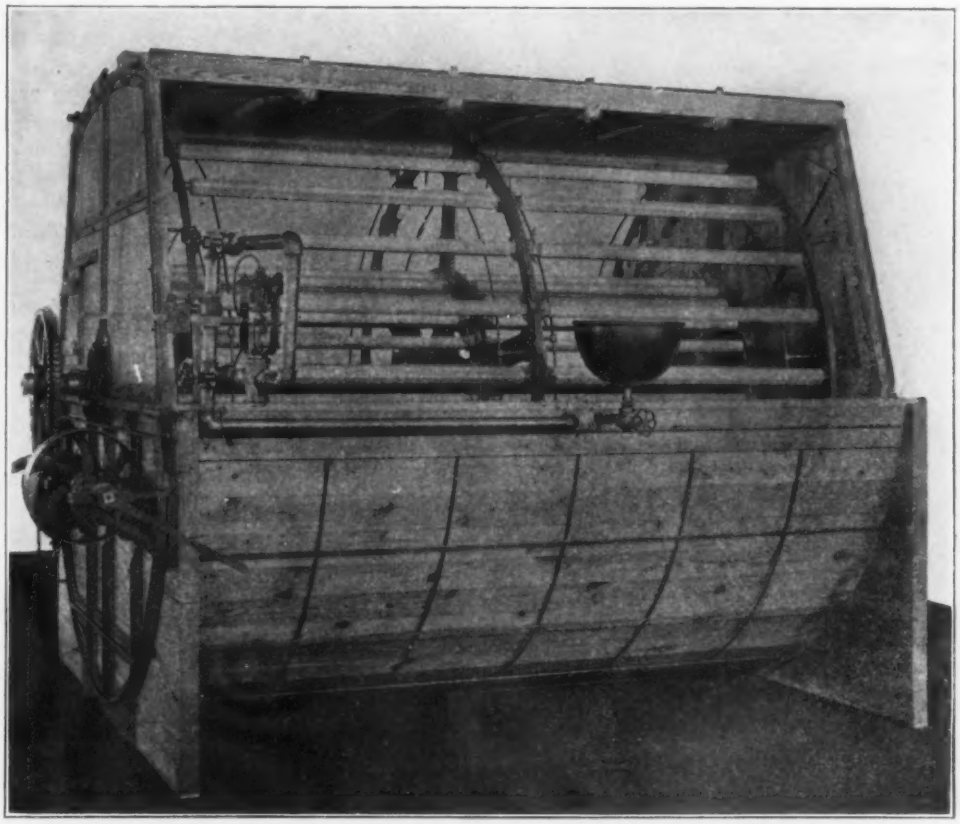


FIG. 1. THE GILES AUTOMATIC DYEING MACHINE FOR SKEIN YARN

possible to operate both sets of sticks at one point in the center of the tub.

Special attention has been given to the tripping device. The star wheels and the tripping roller are always in line with each other, which prevents twisting the wheels and cramping on the bearings. When the machine is reversed the tripping rod automatically rides over the star wheels and falls

FIG. 2. A VIEW OF ONE OF THE RATCHETS IN THE GILES DYEING MACHINE

by gravity to operative position, thus making it unnecessary to adjust the mechanism before reversing.

The opposite end of the stick rests in a socket and is held firmly in place by a flat, double spring outside of the segment, which thus serves to press the stick securely into the ratchet cup. This spring of monel metal is very durable and reliable.

The sticks are adjusted to fit skeins of different lengths by means of a worm and worm gear on a shaft outside of the end spider. The worm gear connects by means of a shaft running across the machine with spur gears operating the racks inside of the ring.

The construction of the ratchet cups and the bearings at the opposite ends results in a great economy in the working space, which is 44 inches between guard rods on a stick 54 inches long. It is possible to use a stick with bearings 1 3/4 inches in diameter at the round end. To adjust the distance between the inside and outside sticks, the worm shaft is turned by a wrench, which turns all the adjusting rings simultaneously without the necessity of handling hot metal or removing any locked parts. The worm and gear serves to lock the sticks in position as the worm cannot be turned by the gear.

The inside sticks are held in place by a cover held in position by a double compression spring of monel metal, which the builders have found to be the best material for resisting acids and alkalies, while possessing the necessary strength and desirability. They claim that the new machine can be loaded as quickly as has heretofore been possible, while an important economy of time is effected in unloading.

The steam enters by a pipe at the center of the tub above the level of the dye liquor, as shown in the illustration, Fig. 1. This pipe connects with a special device by which the steam is divided equally, one-half passing to a perforated pipe at the right and the other to the left, thus giving a uniform distribution of steam across the tub, which is essential for level shades. The steam from these pipes boils the liquor behind a false back, causing a constant circulation and thorough and uniform mixing of the dyestuff as it is added to the bath.

An automatic device regulates the supply of steam, cutting it down to the amount required to maintain the bath at a boil without waste.

The machine is driven by nickel steel, hardened transmission gears of the automobile type, giving three speeds forward and reverse. When desired gearing is supplied to reduce the speed for electric drive. In the phosphor bronze machines there is no iron on the interior. The hoops and cross rods outside are of monel metal. The outlet valve is made with a bronze seat and babbitt metal plug, which closes automatically by gravity. The outlet is 6 inches in diameter, making it possible to empty the tub in a few minutes.

The single machine for wool yarn has 25

sticks and a capacity of 250 to 375 pounds at a dyeing; the double machine with 50 sticks carrying just twice these quantities. The single machine for cotton yarn has 30 sticks and a capacity of 300 pounds; the double machine with 60 sticks, 600 pounds. The builders claim as a result of the improved construction an increase of 25 per cent. in the capacity for the same floor space, power and dye liquor, and sell the machine with a guarantee. The material and workmanship are the best, the machines being built in the shops of the Mason Machine Works, whose long experience and excellent facilities for building textile machinery are well known to the trade.

THE TURBO CLUSTER TANK SYSTEM

The growth and development of the Turbo humidifier has created a demand for smaller installation units and the G. M. Parks Co., of Fitchburg, Mass., has for some time been engaged in working out this problem. They have recently placed on the market the "Turbo" cluster tank, which makes it possible to supply a small humidifying outfit complete without an expensive installation.

Another important factor with these small installations is that the purchaser can, with the assistance of a local plumber and the drawings which are furnished, install the outfit with a comparatively small outlay for pipe, fittings and labor, eliminating the heavier expense that is involved in carfare,

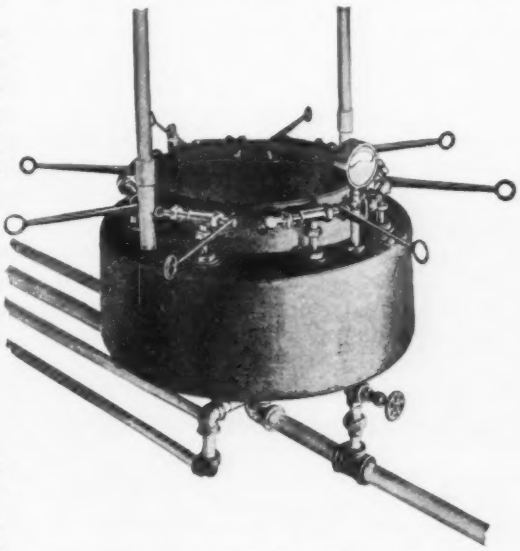


FIG. 1. THE TURBO CLUSTER TANK

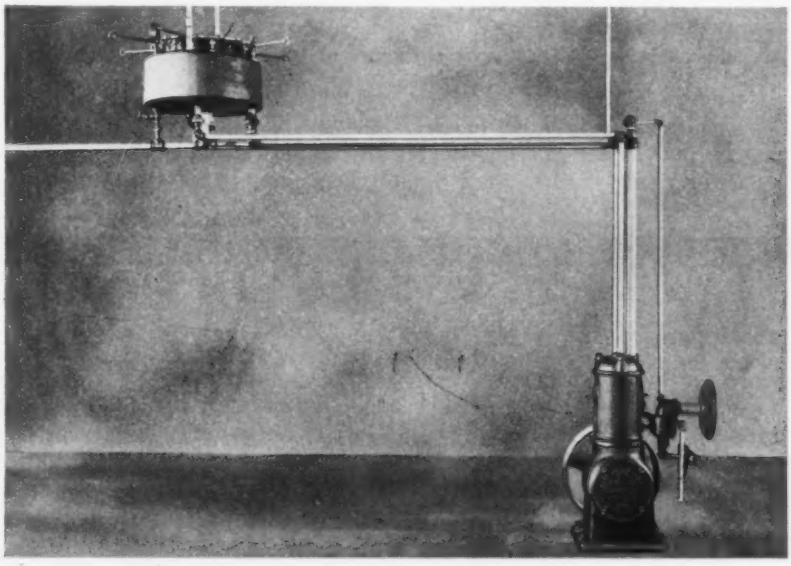


FIG 2. ONE OF THE MANY DIFFERENT ARRANGEMENTS OF THE TANK AND AIR COMPRESSOR

board, freight on tools, etc., when fitters and erectors are sent from the home plant.

Fig. 1 shows the cluster tank. Fig. 2 shows one of many different arrangements with the tank and air compressor. The tank consists of two sections. There is a ring of compressed air, piped up with the air compressor; inside of this is a tank of water with an automatic ball float valve, which is connected to any convenient water supply. This water tank also acts as a circulating reservoir to circulate water around the air compressor cylinder and keep it cool. The air container also acts as a cooler for the compressed air, thus eliminating the moisture and oil, which is essential.

The cluster tank contains a maximum of eight Turbo heads of the usual type, each of which may be operated independently, according to the degree of humidity required.

For small installations, where one room or department only needs to be humidified, a single cluster tank may be sufficient, but different units may be added to the system as desired.

THE IMPROVED CHAPMAN ELECTRIC NEUTRALIZER

The Chapman Electric Neutralizer Co., of Portland, Me., manufacturers of the Chapman process for neutralizing frictional electricity in textiles during the various stages of manufacture, have recently incorporated a number of improvements in the apparatus, particularly in the style of inductor used on cotton cards and on woolen breaker cards. One of these inductors which the Chapman Company term their type "R. T.", and shown at Fig. 1, is made of kiln dried hard wood with hard rubber teeth suitably spaced to project between the doffer comb struts when the inductor is attached to the card in its working position. This style of inductor is now made to fit any American or English card and a number of European machines, including several Belgian wool cards.

FIG 1. THE "R. T." INDUCTOR

The improved inductor, besides reaching down closer to the work, possesses the advantage of being very light compared with the familiar type, "U"" inductor which on account of its weight was somewhat difficult to protect from the excessive vibration sometimes met with on old cards with badly worn comb mechanism, as the inductors are attached to cards by brackets fastened to the comb journal boxes.

The Chapman process, which is used by many representative cotton and woolen mills and by most of the large printing and publishing houses in the country, is an interesting application of electricity and was originated by William H. Chapman, an electrical engineer and inventor of Portland, Me., to overcome the bad effects of static or frictional electricity on the quantity and quality of production in the manufacture of textiles, paper, rubberized fabrics and in printing.

A high relative degree of humidity is a means commonly used to minimize the effects of frictional electricity, which is of course most noticeable in cold or very dry weather.

The superior advantages claimed for the Chapman method are that it is direct, acts forcefully, positively and quickly and without entailing any change in the atmospheric conditions or any possibility of damage to cards or card clothing through rusting, caused by condensation of moisture on the metal.

It does not require any preliminary operation before the machinery is started in the morning, for the results are instantaneous when the switch is turned on and no regulation or fine adjustment is required to get the desired result. It consists of the application of a high tension, alternating charge of electricity, minute in volume and harmless, applied where the frictional electricity is devel-

oped, and which it neutralizes. The neutralization takes place by natural selection and is due to the attraction any charge of electricity, large or small, and whether positive or negative, has for an equal charge of the opposite kind.

Frictional electricity gets in its work on a cotton card the moment the cotton is

FIG 2. AN INDUCTOR FOR THE CHAPMAN NEUTRALIZER

stripped from the doffer by the comb. The mutual repulsion of the fibers caused by their electrified condition tends to disrupt the web, many of the fibers are pushed out as "fly", and some will be found in the sliver with their ends sticking out. The fibers are attracted by conducting metallic surfaces, as for instance the curved guides below each end of the comb blade. This attraction at these points retards the cotton and rolls it under, making it extremely difficult to start the card on a frosty morning.

If this card were to be equipped with the Chapman system; a type "R. T" inductor would be held directly over the comb just back of the blade by hinged holders supported by brackets attached to the comb boxes. Fig. 2 shows an inductor as it would be so held. The teeth would be projecting between the struts just back of the comb blade and within a few inches of the web of cotton leaving the doffer.

Fig. 3 shows the inductor tilted back on its hinged supports out of the way for stripping and grinding. The upright tube shown contains the cable from the high tension line which connects the various cards with the one or more special transformers, a cut of which is shown. These transformers taking a very small amount of energy from the light or power mains, feed a heavily insulated steel wire running around to, under or over the cards, with an alternating charge at about 10,000 volts. The volume of current each transformer can by any possibility deliver, however, is only a few thousandths of an ampere and is entirely harmless, but would give a rather startling shock if received accidentally. For this reason the connection to the inductor is not direct. The cable running up into the floor tube is dead ended there and covered by a heavy rubber hose. Over this hose is a small metal sleeve

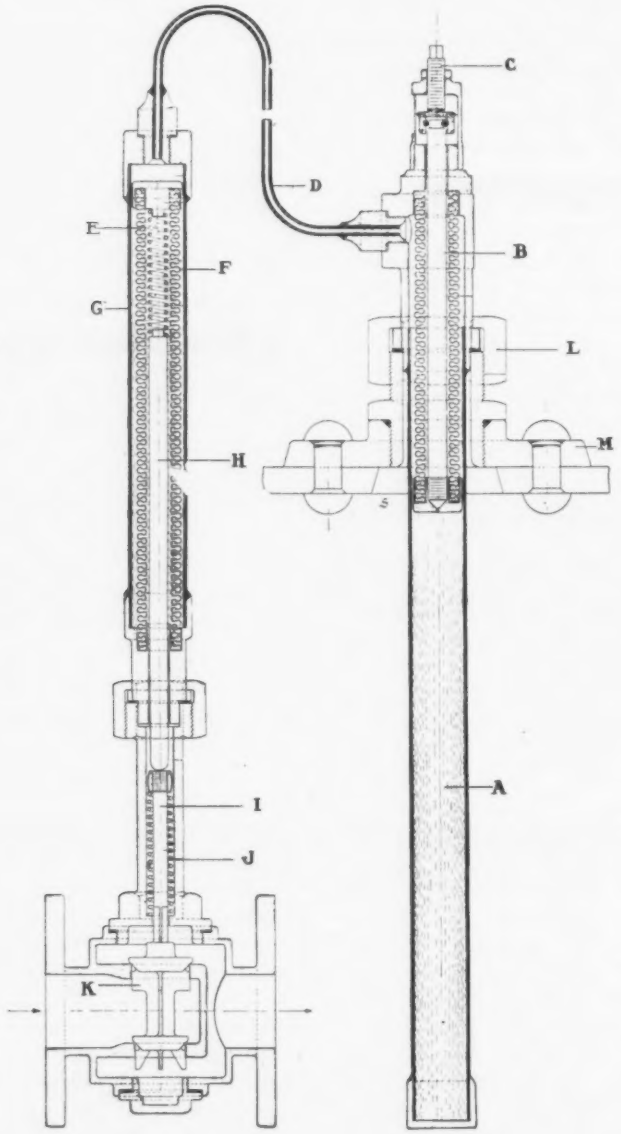
FIG. 3. THE INDUCTOR TILTED BACK FOR STRIPPING AND GRINDING

which gets an induced secondary charge which is delivered to the inductor by another cable carried to the inductor and connected to it by a removable socket.

While the inductor is highly active and capable of instantly neutralizing the static electricity in the cotton below it, scarcely any sensation can be felt when the points are handled with moistened fingers. By removing the induction feature from the inductor proper, as is done with the "R. T" and similar type as distinguished from the type, "U", formerly used by the Chapman Company for cotton mill work, the insulation of the inductor becomes of secondary importance. The complete smashing of a type "R T" inductor would not interfere in the least with the operation of the system, which is entirely automatic and is handled by merely turning a switch same as a circuit of electric lights.

THE "SARCO" WATER TEMPERATURE REGULATOR

The apparatus shown in the accompanying illustration, for regulating the temperature of water, is manufactured by the Sarco Engineering Co., 116 Broad St., New York. The Sarco water temperature regulator is based on the same thermostatic principle as the well known Sarco steam trap, using as its actuating motive power the expansion of a sensitive liquid hermetically sealed within a chamber into which is inserted a flexible corrugated tube. It is substantially made and is not liable to get out of order. It is compact, simple and wholly self-contained, requiring no exterior operating means such as compressed air. It also avoids the use of rubber or leather diaphragms and of metal disc diaphragms.



SECTION OF THE "SARCO" WATER TEMPERATURE REGULATOR

The Sarco regulator is easily installed and

can be arranged to regulate the temperature of water or any other liquid where a supply of steam or hot water is used to obtain the desired temperature within any given container. The apparatus is provided with an adjustable regulating device by which any desired temperature within given limits can be maintained constantly.

In installing the apparatus the thermostat is inserted in the tank or container, the temperature of which is to be regulated and the valve is connected in the steam or hot water pipe, opening up or closing according to the temperature in the tank.

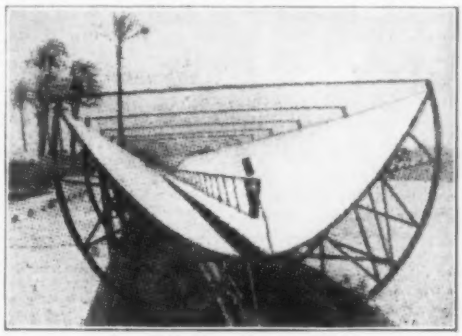
The Sarco regulator is made of three principal parts: A, the thermostat element which is inserted in the boiler or tank, C, the controller element and K, the valve. The thermostat, A, is a tubular receptacle containing a heavy hydro-carbon oil into which is inserted a piece of corrugated copper tubing the length of which is extended or reduced by turning the regulator head, C. From this thermostat a piece of fine copper tubing, D, passes to the controller, G, which also contains a piece of corrugated tubing capable of compression when an increase of temperature causes the surrounding liquid to expand. The thermostat, A, the connecting copper tube, D, and the controller, G, form one hermetically closed chamber. When the temperature increases in A, the pressure increases and is transmitted to the controller, G, causing a compression of the copper tube, F, which forces out the piston, I, and tends to close the valve. Spiral springs, E and J, operating in the opposite direction tend to keep the valve open.

The regulator is remarkably simple and is capable of fine adjustment, this being achieved, as stated, by increasing or reducing the space in which the expandable fluid is confined by turning a screw on the thermostat which extends or contracts the corrugated tube.

The manufacturers believe that it would be suitable for the automatic regulation of the temperature of dye baths and have already received an order for this purpose from a textile mill.

MAKING THE SUN WORK

One of the first problems that await solution in the development of the Sudan is the problem of sources of power. There has been considerable exploration in search of oil, but so far it has not met with any very great success. Now that the Sudan is in full working order coal, of course, can be brought within reach of the railways at a price which, although not low, is not too high to be prohibitive. Taking energy to the Sudan is really, however, carrying coals to Newcastle, for the immense solar energy



A SUN BOILER ON THE SUDAN

of the African sun is a source of power, which, if it could be tapped, is probably greater than all the coalfields in the north of England. There is at present working successfully in Egypt a sun boiler which, if it fulfils the promises of the experimental plant, will render unnecessary the pumping of oil or the shipping of coal. The boiler, which is the invention of Frank Schumann, consists of a double line of mirrors arranged to form a long shallow trough, with a thin flat boiler carried down the middle of the trough in the focus of the mirrors. The mirrors reflect the heat of the sun and focus it on to the boiler. At Cairo, where the experimental plant is at work, the temperature of the sun during the summer months is 140° in the open. The mirrors concentrate the heat in the proportion of 5 to 1, and therefore they get a temperature equal to about 550° or 600° F. The inventor believes that the plant will be useful in all countries within 20° north or south of the equator.—Manchester Guardian.

Personals

Melvin B. Horton has been elected treasurer of the Merchants Manufacturing Co., Fall River, Mass. He is a native of Fall River and was educated in the public schools there. After leaving school he entered the office of the Union Manufacturing Co., where he remained for seven years. He then entered the brokerage firm of the late George H. Hawes, founder of the firm of George H. Hawes & Co. He afterwards, with a partner, established the firm of Andrews & Horton, cotton brokers of that city.

James Callahan, for the past twenty-five years overseer of weaving at the Carolina Mills Co., Carolina, R. I., has moved to Boston, Mass., where he has gone into business.

Robert F. Logan, formerly overseer of weaving at the Shetucket Co., Norwich, Conn., has resigned to accept a similar position with the Manhasset Manufacturing Co., Putnam, Conn.

Edwin Kyle has been promoted to the position of overseer of spinning at the H. H. Wood & Company's Mill, Lakeport, N. H.

Frances Carroll has accepted the position of overseer of spinning at the Tilton Mills, Tilton, N. H. He was formerly employed at the H. H. Wood & Company's Mill, Lakeport, N. H.

E. F. Moore, overseer of spinning at the Bound Brook Woolen Mills, Bound Brook, N. J., has severed his connection with that company.

F. D. Toof has accepted the position of overseer of spinning at the New England Cotton Yarn Co., Departments 9 and 10, New Bedford, Mass.

Benjamin Sprowson has accepted the position of overseer of carding at the Baltic Mills Co., Baltic, Conn. He was formerly employed at the Globe Yarn Mill, Fall River, Mass.

Harold W. Carpenter has been appointed designer at the Warren Cotton Mills of the Thorndike Co., West Warren, Mass. He was formerly employed at the Shetucket Co., Norwich, Conn.

George Campbell, superintendent of the Renfrew Manufacturing Co., Adams, Mass. has severed his connection with that company.

William Hall, for the past five years overseer of finishing at the Merrimack Woolen Co., Dracut, Mass., has resigned his position with that company.

Charles O'Brien has accepted the position of overseer of finishing at the Merrimack Woolen Co., Dracut, Mass. He was formerly employed at the Bay State Mill, Lowell, Mass.

Leon E. Allard has accepted the position of assistant designer at the Manton Mill, American Woolen Co., Manton, R. I. He comes from the Aetna Mill, Watertown, Mass.

J. F. Thompson has accepted the position of overseer of spinning and winding at the Chinnabee Mills, Talladega, Ala. He comes from Bon Air, Ala.

R. S. Scarboro has accepted the position of overseer of spinning at the new mill of the Dan River Mills, Danville, Va. He comes from Concord, N. C.

A. W. Roper has accepted the position of overseer of carding at the Cherryville Manufacturing Co., Cherryville, N. C. He comes from Bessemer City, N. C.

J. I. Whitaker has been promoted from second hand to overseer of weaving at the Washington Mills, Fries, Va.

G. C. Pruitt has accepted the position of overseer of weaving at the Eva Jane Mills, Sylacauga, Ala. He was formerly employed at the Washington Mills, Fries, Va.

W. H. Johnson has accepted the position of overseer of weaving at the Morgan & Hamilton Co., Nashville, Tenn. He comes from Fries, Va.

George H. Riddle has accepted the position of overseer of spooling, warping and slashing at the Inverness Mills, Winston-Salem, N. C. He was formerly employed at the Aragon Mills, Aragon, Ga.

Frank Beavers, assistant dyer at the Ayer Mill, American Woolen Co., Lawrence, Mass., has resigned to accept a similar position with the Lawrence Dye Works, Lawrence, Mass.

Benjamin F. Fahey, overseer of carding at the Sanford Spinning Mill, New England Cotton Yarn Mill, Fall River, Mass., has severed his connection with that company and will retire from active service.

C. E. Briggs has been appointed superintendent of the Davenport Mill, operated by Myers, Jolesch & Co., New York, N. Y. He comes from Jamestown, N. Y.

Joseph Schardt has accepted the position of overseer of carding at the W. E. Hayward & Company's Mill, East Douglas, Mass. He comes from Carolina, R. I.

John Collier has been appointed superintendent of the Royalston Mill, American Woolen Co., South Royalston, Mass., succeeding E. B. Hanson. Mr. Collier was formerly employed at the Crawford Woolen Co., Martinsburg, West Va.

Joseph Janero has been appointed overseer of weaving at the French River Textile Co., Mechanicsville, Conn., succeeding Paul Wetstein. He was formerly employed as second hand of weaving at this mill.

Robert S. Dodds, overseer of weaving at the Lebanon Mills, American Woolen Co., Lebanon, N. H., has severed his connection with that company.

A. Illingsworth has accepted the position of overseer of dyeing at the Allentown Eiderdown Co., Allentown, Pa., succeeding the late Arthur Fenton.

George E. Walls, overseer of carding at the Newmarket Manufacturing Co., Newmarket, N. H., has severed his connection with that company.

Arthur Butterworth, overseer of finishing at the Lebanon Mills, American Woolen Co., Lebanon, N. H., has severed his connection with that company.

Albert Simpson, who has been night superintendent at the Priscilla Worsted Mill, Providence, R. I., has been appointed general superintendent of this plant to succeed Irving Ward.

Irving Ward has been appointed superintendent of the worsted yarn department at the Lymansville Co., Lymansville, R. I.

George Lambert, who had charge of the worsted spinning at the National & Providence Worsted Mill, American Woolen Co., Providence, R. I., has been appointed night superintendent of the Priscilla Worsted Mill, same city.

John Gibson has accepted the position of second hand in the ring spinning department at the Grosvenordale Co., Grosvenordale, Conn.

T. A. Sullivan has accepted the position of second hand in the spinning room at the Farwell Mills, Lisbon, Me. He comes from Claremont, N. H.

Benjamin A. Fahey, overseer of the carding department at the Sanford Spinning Co., Fall River, Mass., has severed his connection with that company.

Allan L. Hatch, overseer of carding at the Tremont & Suffolk Mills, Lowell, Mass., for a period of over eleven years, has severed his connection with that company. In 1902 he came to the Tremont & Suffolk Mill from a mill in Taunton, Mass.

Harry Peabody, for over fourteen years employed as second hand in the carding department at the Lancaster Mill, Clinton, Mass., has resigned to accept a position as overseer in a large mill in Providence, R. I.

Walter J. Bickford, superintendent of the shoddy department at the Beaver Brook Mill, American Woolen Co., Collinsville, Mass., and Miss Winfield Carrick of Collinsville, were united in marriage on October 28.

Robert S. Wallace has succeeded his father, Herbert I. Wallace, as treasurer of the Fitchburg Yarn Co., Fitchburg, Mass. He has also been made a director of the company.

W. P. Sanders has accepted the position of overseer of carding at the Willingham Cotton Mill, Macon, Ga. He was formerly employed at the Bibb Manufacturing Co., Mill No. 1, same city.

N. W. Garner has accepted the position of overseer of weaving at the Fulton Bag & Cotton Mills, Atlanta, Ga. He was formerly employed at the Gainesville Cotton Mill, Gainesville, Ga.

E. L. Sheridan has accepted the position of overseer of spinning at the Harmony Grove Mills, Commerce, Ga. He comes from Jefferson, Ga.

E. E. Smith has accepted the position of superintendent at the Lydia Mill, Clinton, S. C. He was formerly employed at the Highland Park Mill No. 3, Charlotte, N. C.

J. R. Bean has been appointed manager of the Gaston Manufacturing Co., Cherryville, N. C., succeeding T. C. Farrie.

C. R. Dix has accepted the position of overseer of carding in the cotton department at the Atlanta Woolen Mills, Atlanta, Ga.

W. W. Gregg has accepted the position of superintendent of the Ida Yarn Mills, Laurel Hill, N. C. He comes from Kinston, N. C.

L. H. Roberts has accepted the position of overseer of spinning at the Jefferson Cotton Mills, Jefferson, Ga. He comes from Winder, Ga.

J. A. Parker has accepted the position of overseer of carding at the Carolina Mills, Greenville, S. C. He was formerly employed at the Eureka Mills, Chester, S. C.

M. C. Dawkins has accepted the position of overseer of carding at the Eureka Mill, Chester, S. C. He comes from Rock Hill, S. C.

J. M. Waddleton has accepted the position of overseer of weaving at the Highland Park Mill No. 1, Charlotte, N. C. He was formerly employed at Fayetteville, N. C.

George A. Weldon, overseer of weaving at the Edwards Manufacturing Co., Augusta, Me., has severed his connection with that company to accept a similar position with the Drayton Manufacturing Co., Spartanburg, S. C. He was presented with an elegant traveling bag, military brushes, silk umbrella, pocket book and a $10 gold piece by the help employed in his department, the presentation being made by Daniel O'Brien, overseer of the cloth department.

Other Personals and mill news will be found on pages 161 to 223.

DEATHS.

Eben Blake Page died at his home in Winchester, Mass. Mr. Page was born in Hebron, Conn., seventy-six years ago and was president and director of the Blodgett & Orswell Co., of Pawtucket, R. I., treasurer and director of the Bridgeport Elastic Web Co., of Bridgeport, Conn., and director of the Cotton and Woolen Manufacturers' Mutual Insurance Co. He is survived by a widow and one son.

William Kelly, superintendent of the velvet department at the Pacific Mill, Cocheco Dept., Dover, N. H., died in a physician's office in Lowell, Mass., where he went for treatment. He was 47 years of age and came from England several years ago, when he took charge of the velvet department. He is survived by four sons and three daughters.

Paul Stursberg, superintendent of the worsted department at the Germania Mill, Holyoke, Mass., died at his home in that city after an illness of about six months. He is survived by his widow, his mother, Mrs. Herman Stursberg, and a sister, Mrs. Herman Myer.

Josiah L. Parker, for sixty years connected with the Globe Woolen Co., of Utica, N. Y., as wool buyer, died at his home in that city at the age of 86 years. He was one of the oldest wool buyers in this country. Mr. Parker was born at Brookfield, Madison County, N. Y.

Edmund Corcoran, for a number of years superintendent of the Shackamaxon Mills, Philadelphia, Pa., who was president and treasurer of the Rockville Worsted Co., Rockville, Conn., died in Philadelphia, November 3. Mr. Corcoran was for a number of years superintendent of the Hockanum Mills Co., of Rockville, Conn., and later with the American Woolen Company's mill as superintendent.

Charles Emmett, for a number of years overseer of the dyeing department at the Peace Dale Manufacturing Co., Peace Dale, R. I., died in that town at the age of 69 years. Mr. Emmett was born in Leeds, Eng., and is survived by three daughters and one son.

Arthur Fenton, for a number of years overseer of dyeing at the Allentown Eiderdown Co., Allentown, Pa., died at his home in that city. He is survived by a wife and four children.

John S. W. LeBlanc, 62 years of age, died at his home in Salem, Mass. For a number of years he had been employed as an overseer at the Naumkeag Steam Cotton Mill at Salem, but retired from active mill life some years ago.

Charles W. Amory died at his home in Boston, Mass., of heart failure. He was educated at the Boston Latin School previous to his entering Harvard College, from which institution he graduated. Mr. Amory was born in Boston seventy-one years ago. He enlisted in the Second Massachusetts Cavalry in 1863 and was afterwards promoted to First Lieutenant of his Company. After the war he made a trip to Europe and on his return became identified with a Boston dry goods firm. In 1880 he was elected treasurer of the Amory Manufacturing Co., at Manchester, N. H., and two years later was elected treasurer of the Landon Manufacturing Co. Afterwards he was elected president of the Amoskeag Manufacturing Co., which position he resigned in 1905. His wife, two sons and one daughter survive him.

The many friends of Harry W. Butterworth, president of the H. W. Butterworth & Sons Co., Philadelphia, are deeply grieved to learn of the death of Mrs. Butterworth, which occurred November 9th at their home in Germantown. Mrs. Butterworth had been critically ill for several months at their summer place near the Delaware Water Gap. At the time of the Atlantic City Convention she had improved to such an extent that Mr. Butterworth was able to leave her for the first time in several months to attend the Convention, but a relapse followed. Mrs. Butterworth often accompanied her husband to the Conventions of the Manufacturers and she will be greatly missed by many who will retain most pleasant recollections of her cordial and kindly character.

Benjamin F. Scholfield died at his home in Montville, Conn., in the Oakdale section, at the age of 91 years. Mr. Scholfield was born in Stonington, Conn., the son of Joseph and Mercy (Newbury) Scholfield. A number of years ago he operated the mill known as the C. F. Scholfield Mill, but retired from active business several years ago. He is survived by a wife and two children.

Thomas F. Burke, superintendent of the Tingue Manufacturing Co., Seymour, Conn., died at his home in Seymour, November 18. Mr. Burke had been in failing health for some time but was confined to his bed only three weeks. Death was due to cirrhosis of the liver. Mr. Burke was born in Norwalk, Conn., Aug. 23, 1862. For a number of years he was superintendent of the Hawthorn Mill at Glenville, Conn., and later was with the Westerly Woolen Co., Westerly, R. I., also the Chambersburg Woolen Mill, Chambersburg, Pa. He is survived by his wife and five daughters.

William E. Sharples, who was for a number of years superintendent of the Troy Cotton & Woolen Manufacturing Co., Fall River, Mass., died at his home in that city at the age of 79 years. About a year ago he retired from active business with a record of sixty-nine continuous years of mill service. He is survived by his wife, four sons and two daughters.

Benjamin C. Brainerd died at his home in South Hadley Falls, Mass., at the age of 71 years. For a number of years he was agent of the Glasgo Mills, a position which he resigned later to become agent of the Washington Mill, Gloucester City, N. J. He afterwards returned to South Hadley Falls, Mass., and was employed at the Mechanics' Saving Bank. Several years ago he retired from that position on account of ill health.

Louis Anderson died at his home in Skowhegan, Me., November 10 at the age of 74 years. Mr. Anderson was born in Scotland. When a young man he came to this country and became interested years afterward in the Anderson Mill of Skowhegan, Me. Several years ago the American Woolen Co. bought his interest in this mill. He is survived by a son and one daughter.

William T. Booth, for twenty-one years overseer of the dyeing department at the Pacific Mill, Lawrence, Mass., died at his home in that city at the age of 67 years.

Henry Parker died at his home in Providence, R. I., at the age of 52 years. For a number of years he was overseer of the worsted yarn department at the Pocasset Worsted Co., at Providence.

Francis L. Senior, 64 years of age, who was for the past thirty years chemist at the Sanford Mills, Sanford, Me., died in that town recently. Mr. Sanford was found dead sitting in a chair in his laboratory at the mill on Sunday, November 16. He is survived by two sons and a daughter. In the death of Mr. Senior, the town of Sanford loses one of their highly respected and esteemed citizens.

New Publications

Any work noticed under this heading can be obtained, postage or express charges free, by sending the price listed to Lord & Nagle Company, 144 Congress St., Boston, Mass.

The Manufacture of Woolen and Worsted Yarns; by J. W. Radcliffe, head of the spinning department, Technical School, Dewsbury, Eng.; 341 pages, 4 3/4 by 7 1/2; Emmott & Co., 65 King St., Manchester, Eng. Price $2.

This useful book has been compiled in order to give both students and operatives a concise but comprehensive account of the machinery and processes required for the manufacture of carded woolen or worsted yarn. The work is freely illustrated, the descriptions are clear and the volume forms a very valuable addition to the literature dealing with this branch of the textile industry. It would have been improved, however, by adding a chapter on the Heilmann comb. Following is an abstract of the table of contents: The Selection and Sorting of Wools; Comparisons in Woolen and Worsted Yarn Manufacture: Wool Scouring; Wool Drying; The Preparation and Blending of Wools; Worsted Carding; Setting and Speeding Arrangements; Card Grinding; Wool Carding; Back-Washing; Preparing and Drafting; Oils and Oiling; Wool Combing; Blending and Regulating Delivery in Top Making Machinery; Testing Tops for Uniformity and Condition; Drawing Operations; Cone-Drawing; Calculations in Cone-Drawing; French Drawing; Comparisons of Spinning Machinery; The Self-Acting Mule for Worsted and Woolen Spinning; Observations in Mule Spinning; Twists for Various Types of Yarns; Types of Fancy Twist Yarns; Further Comparisons of Spinning Machinery; Twisting and Reeling.

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The Future of the Working Classes; by Roger W. Babson; 76 pages, 5 by 7 1/2; Babson's Statistical Organization, 6 Congress St., Boston, Mass.

The contents of this little volume consists of lectures delivered by the author in London and Paris in March and April, 1913. The first section is devoted to an answer to the question, "Can the working Classes Ever Become Prosperous?" The second chapter deals with the basis of England's power, while the concluding section takes up the defects in the English system of education and makes the prediction as to how boys will be educated in 1963 and suggestions for the improvement of the present education.

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Selling Forces; prepared by Richard J. Walsh; 282 pages, 5 1/2 by 9; The Curtis Publishing Co., Metropolitan Tower, New York. Price $2.

This work has been prepared by Mr. Walsh under the direction of the advertising department of the Curtis Publishing Co., and consequently it gives the ideas of that experienced organization regarding national advertising. It is written for the benefit of those who are not experienced in the art or science of advertising and the subject is considered under the following heads: Advertising Today, The Development of Advertising, The Efficacy of Advertising, The Advertising Agent, Advertising and the Consumer, Advertising and the Retailer, Advertising and the Jobber, The Results of Advertising, "Reasons" for Not Advertising, Getting the Facts at First Hand, The Future of Advertising, Ten Million Dollars a Year, Advertising to Women, Advertising to Business Men, Advertising to Farmers, A Monument to Advertising.

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Textiles, A Handbook for the Student and Consumer; by Mary Schenck Woolman, B. S., and Ellen Beers McGowan, B. S.; 428 pages, 5 by 7 1/2; The Macmillan Company, New York. Price $2.00.

The authors of this book state that it has been published to meet a need growing out of "the growing emphasis upon textile study in college departments, the movements to regulate conditions in the textile and clothing industries and to secure standardization and honest labeling of textile products as is being done for food products by the 'pure food laws.'" That there is need of books for the instruction of the general public regarding textiles is beyond question, but the present volume falls far short of what is required. This attractive volume testifies to the industry, patience and earnestness of the two authors. It contains much useful information about textiles, arranged in a systematic form, but its prevailing defect arises from the fact that it is based on second hand and in many cases imperfectly understood information, and written by those who, lacking the knowledge that comes only by years of practical experience in the mill, have had that shortcoming aggravated by the habit of speaking with authority, which is acquired by years spent in the classroom. A few extracts will illustrate this inherent defect. We are informed that "worsted manufacturers use noils" and that the sizes of worsted yarn are "estimated" by the count. In dealing with the cotton industry the book states that "Fall River is the largest cotton manufacturing town in the world, having four million spindles at work," and that "Birmingham, England, is said to be second to Fall River as a cotton manufacturing town." The inhabitants of Birmingham, the great metal working center, will be surprised to read that statement. As for Fall River, the mills in that city have 4,000,000 spindles, but the mills of Oldham, England, have about 12,000,000. In the chapter on the microscopic study of textile fibers we find this: "The microscope will occasionally reveal wool fibers with a tendency to twist. This is due to the fact that the wool has at some time been subjected to overheating." Referring to shoddy the book contains this positive assertion: "These kinds of fibers, collectively called shoddy, can be conclusively determined under the microscope with care and practice." Having reached that conclusion, it is not surprising to find the authors writing about the "honest labeling of textile products as is being done for food products by the pure food laws."

These extracts show how the book is calculated to mislead instead of inform. It is to be regretted that one of the authors was not a practical textile man or woman, so that literary ability, industry and talent for giving instruction might be combined with exact knowledge of what is and what is not.

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Dockham's Glove and Mitten Manufacturers; Dockham Publishing Co., Boston, Mass. Price $1.00.

The 1913 edition of this useful publication has appeared and gives lists of glove and mitten manufacturers in the United States and Canada. The kind of gloves and mittens manufactured, whether cloth, leather or knit is indicated and the work gives evidence of careful preparation.

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BUSINESS LITERATURE

Ball Bearings; 27 E. Erie Ave., Philadelphia, Pa.

This is an interesting discussion of ball bearings and their application to axle generators. It is illustrated with a number of views and diagrams of different types of the Hess-Bright ball bearings which have a high reputation gained by use under the most severe conditions.

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The Year-Book for Colorists and Dyers; by Herman A. Metz. New York.

The contents of this, the fifteenth volume of the series, presents much information of value. The contents of the work are classified as follows: Reference Tables; Papers Read at the Eighth International Congress of Applied Chemistry; Patents for the Year 1912; Notes on Processes, New Colors, etc.; Educational; List of Dyestuffs, Makers and Methods; Miscellaneous Notes; Index.

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Cloth and Yarn Testers: Henry L. Scott & Co., 223 Eddy St., Providence, R. I.

This firm has recently issued two booklets, one describing their yarn testing machine and the other the cloth tester, which have been extensively adopted in the textile trade. The description of the yarn testing machine includes a table of the breaking strength of cotton yarn, also a worsted table giving the weight of one hank for different counts. There is also a useful table for woolen yarn. The yarn tester has been adopted by the United States government and half-tone reproductions of checks from the Treasury Department are shown, being in payment for the testing apparatus. There is a long list of users in both the yarn and cloth testers, indicating conclusively the merits of the machines.

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Mill Construction; W. D. S. Dyer, constructing engineer, Land Title Bldg., Philadelphia, Pa.

A folder, giving a partial list of the 400 factories, mills and power plants which Mr. Dyer has designed, constructed and superintended in Philadelphia and vicinity in the last ten years. This is his specialty and the work enumerated includes some of the most important new mill construction in that neighborhood.

Lunkenheimer Regrinding Valves; The Lunkenheimer Co., Cincinnati, O.

A 23-page booklet illustrating and describing the Lunkenheimer regrinding valves for steam pipes. It also contains a complete price list of the regrinding horizontal, angle, vertical and swing check valves. This booklet will be sent on application to anyone interested.

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J-M Asbestos Roofing and Waterproofing Specifications; H. W. Johns-Manville Co., Cleveland, O.

This 56-page booklet deals with the latest and most successful methods for the application of the J-M asbestos roofing and waterproofing specifications to all types of buildings, and also gives for the first time specifications for the permanent waterproofing of construction work of every description and laying of mastic flooring. There are many excellent illustrations of buildings all over the country that are covered with the J-M asbestos roofing.

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Steam Traps; Unions for Steam Pipes; Feeding Graphite for Lubricating Purposes; The Joseph Dixon Crucible Co., Jersey City, N. J.

Engineers who keep a file of books for reference will be interested to know that the Josepn Dixon Crucible Company still have a limited number of booklets dealing with the above subjects, which will be sent free as long as the supply lasts to anyone interested. These treatises were prepared by the well known engineer, W. H. Wakeman, who has written many articles on practical engineering problems. Numerous illustrations are used to make each subject easily understood.

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Mesta Gas Engines; Mesta Machine Co., Pittsburgh, Pa.

An 8-page booklet describing and illustrating the Mesta gas engines. This company build gas engines for any class of service and for any fuel gas, such as producer gas, blast furnace gas, coke oven gas or natural gas, in sizes from 350 b. h. p. upwards.

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Drawing and Roving Frames.

The Woonsocket Machine & Press Co. have issued a very attractive catalogue describing their drawing and roving frames, which contains as well valuable tables of production, tables for numbering roving and other data. Designed and printed by the Puritan Publishing Co.

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CALENDARS

Draper Co., Hopedale, Mass., have issued their daily calendar for 1914 consisting of large date sheet for every day in the week, and intended as a wall calendar to be seen across a large office.

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The Cabarrus Cotton Mills, Kannapolis, N. C., will add twenty 20 h. p. special four-frame motors and switches to their equipment for electric drive, and have ordered them from the General Electric Company.

Industrial Notes

CAUTION

Some months ago the trade was cautioned against a man, representing himself to be William J. Butterworth, Jr., who endeavored to give the impression that he was connected with the H. W. Butterworth & Sons Co., of Philadelphia, and who frequently asked for a loan or advance. This person has again appeared in a Massachusetts mill and the trade are again cautioned to be on their guard against this individual.

STOOLS AND CHAIRS FOR OPERATIVES

The new labor law in Pennsylvania makes it necessary for employers to furnish seats for women employes at a ratio of one seat or stool for every three women, placed in accessible locations and with reasonable opportunity for using them.

It will therefore be necessary for many manufacturers to provide themselves with a substantial, durable and economical equipment of this character, which does not take up much room.

The Angle Steel Stool Co., of Otsego, Mich., has for some years made a specialty of steel stools, chairs, tables and benches for factory use and they have a variety of designs to suit various requirements.

HEATING, VENTILATING AND AIR MOISTENING

The Lord & Taylor Department Store Bldg., in New York City, now under construction, is to be equipped with Buffalo heating and ventilating apparatus and the Carrier air washers and humidifiers. This equipment constitutes one of the largest contracts of its kind placed in 1913. There are to be 64 fans, all driven by direct connected motors. The sizes and speeds selected with special reference to noiseless operation. Twenty-five of these fans are to be of the conoidal multiblade type, and the remainder, cone fans and propeller wheels. Eleven Carrier air washers will clean and humidify the incoming air, each washer being equipped with the Carrier system of automatic humidity control.

CANADIAN BRANCH

The Toronto branch of The Canadian H. W. Johns-Manville Co., Ltd., announces its removal to more spacious quarters at No. 19 Front St., East. This new store and warehouse has a floor area of approximately 35,000 sq. ft. and is situated in the heart of the wholesale district. In their new quarters this firm will be able to carry a larger stock and have ample space for the display of their complete line of J-M Asbestos roofings, packings, pipe coverings, building materials, electrical and railroad supplies, automobile and plumbing specialties, etc. The entire building will be lighted by the Frink and J-M Linolite systems of lighting and one room will be used for exhibiting these systems.

DESIGN REGISTRATION CONVENTION

About 240 manufacturers, merchants, importers, designers and delegates from trade associations attended the design registration convention held at the Hotel Astor on Nov. 21. The meeting was called to order by S. M. Weatherly, secretary of the National Registration League. C. R. Clifford was elected Temporary Chairman and made the first address. Robt. W. Nelson was afterwards elected Permanent Chairman and J. Clyde Oswald, Vice Chairman. The meeting was called by the National Registration League for the purpose of drafting a bill to recommend to Congress to prevent the piracy of designs so common at the present time. The Kahn was denounced in no uncertain terms, and the demand was general that it be amended. The following other gentlemen addressed the convention: E. W. Bradford, Pres. Patent Law Asso. "The Need of a Design Registration Law"; Wm. A. Marble, Pres. of Merchants' Asso. of N. Y.; Wm. H. Ingersoll, Pres. of Ad Men's League of N. Y.; John S. Holbrook, V. P. Gorham Mfg. Co.; Chas. Cheney of Cheney Bros., Pres. Silk Asso. of Am. on the Piracy Curse in the Silk Industry; W. Houston Kenyon on The Kahn Law; Frank Alvah Parsons, Pres. N. Y. School of Art, on the skill and ability required to produce designs; Howard N. Heston, What Designs Mean to the wall paper industry; Richard H. Waldo, Pres. of the Union Club on the value of designs in advertising.

A TAG HOLDER FOR KNITTING CONES

A patent has recently been issued to D. F Byrnes, of Delavan, Wis., for a tag holder, which is a simple device formed of wire in proper shape to be inserted in the hole of the yarn cone or neck of a large "bottle neck" bobbin holder. This clip or holder securely holds the tag or ticket indicating the kind of yarn on the bobbin or cone. It has been used in several mills with success.

BALTIMORE BRANCH OF THE H. W. JOHNS-MANVILLE CO.

In order to take care of the increase of business, the Baltimore branch of the H. W. Johns-Manville Co., has been compelled to seek larger quarters. The new home of the company is a modern six-story building with floors measuring 47 by 187 feet, located at 207-13 E. Saratoga St., which is within two blocks of the post office and in the heart of the business section. It will include an attractive store and up-to-date offices, in addition to large warehouse accommodations. To facilitate the handling of incoming and outgoing shipments there will be a railroad switch running into the building.

The Garner Print Works and Bleachery, West Haverstraw, N. Y., will install 100 h. p. and 150 h. p. motors ordered from the General Electric Co.

THE GOULDS MFG. CO.

C. L. Newcomb, Jr., has been appointed to succeed G. B. Turner as western representative of The Goulds Mfg. Co., Seneca Falls, N. Y. Mr. Newcomb's headquarters will be at 12 Chamber of Commerce, Denver, Colo. and he will look after the company's interest in the Rocky Mountains and Northwestern territories. Previous to this connection Mr. Newcomb has had several years' experience in the pump business and he is well known to the trade in the territory he will travel.

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ELEVATOR SAFEGUARDS

The recent changes in liability and workmen's compensation insurance regulations and laws has led to much greater demand for elevator safeguards and devices tending to reduce accidents from this source of danger.

The Salem Elevator Works, Salem, Mass., which has always made a specialty of mill elevators, is now making a specialty of attaching to elevators already in use automatic folding hatch doors, semi and full automatic gates, automatic locking and stopping devices, automatic car safety attachments, etc.

They apply these not only to elevators of their own make, but to others and are doing a great deal of work in this line.

They have had a busy summer and report that the elevator business still continues to be excellent. They are installing many direct connected electric machines in textile mills. One big order, which has just been finished, is the entire elevator equipment for the new Pacific Print Works at Lawrence, also for the new woolen department of the same concern.

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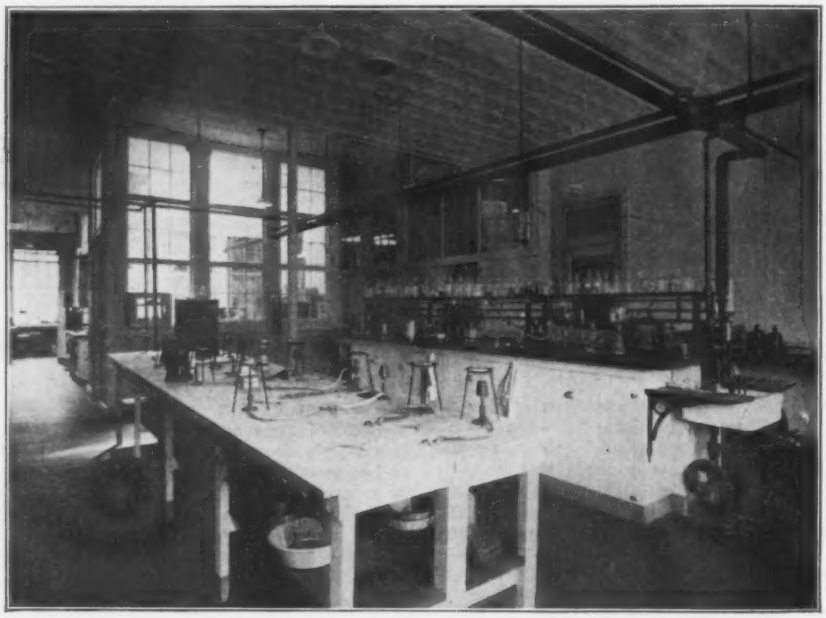
THE EMERSON LABORATORY

The importance of scientific testing of the materials and supplies used in manufacturing is now generally recognized by textile manufacturers. The necessity for such tests arises at every stage of manufacturing, and upon the care and accuracy with which the tests are made depend in large measure the cost of the finished product and, consequently, the profits of the business. The Emerson Laboratory, cor. Chestnut and Winter Sts., Springfield, Mass., is organized with a trained force of experts and a modern equipment to test materials for manufacturers.



A VIEW OF THE EMERSON LABORATORY

The illustrations show two views of the interior of the laboratory. There is a special room for making tests of water, a coal testing room, a bacteriological department, an iron and steel testing room, and a separate department for tests of textile and other materials, including those used in paper mills. Special attention is given to textile tests, this department being equipped with the latest apparatus. Among the tests that are of special interest to textile manufacturers are those to determine the value of coal, the purity of water, strength of dyestuffs, moisture in textile materials, the strength of yarn and fabrics and the value of finishing materials, sizes, soaps, greases and oils.

Every effort has been made to make the labo-

ratory as efficient and systematic as possible. All plumbing is visible, and each pipe is painted a different color that there may be no mistake in turning on the desired article, be it gas, water, steam or compressed air. There are a number of supply rooms and a large supply of all the constantly used materials is always kept on hand.

The Emerson laboratory was established in 1899, and the present members of the laboratory staff and the departments over which they have charge are as follows: H. C. Emerson, director, bacteriological and medical tests; F. W. Farrell, chief chemist, paper, food and glue; G. L. Clark, fuel, oils and metals; W. H. Wooffindale, textiles; C. R. Cressy, cement; E. A. Treadwell, assistant.

Mr. Wooffindale, who is in charge of the textile department, has had twenty years' experience in textile mills, being both a practical mill man and a chemist. He is thoroughly posted regarding dyestuffs and chemicals, dyeing processes, bleaching, finishing and printing and is prepared to give advice on all branches of textile work. The Emerson laboratory invites correspondence from manufacturers and are prepared to give prompt reports on all cases submitted to them.

ANOTHER VIEW OF THE EMERSON LABORATORY

The Sterling Mills, Lowell, Mass., will install a 100 k. w. alternating current generator with 5 k. w. exciter and switchboard which will be furnished by the General Electric Company.

CARD STAMPING

Walter Hodgson, successor to Hodgson & Beatty, 315 W. Lehigh Ave., Philadelphia, is sending out to the textile trade a wall calendar. This calendar in addition to containing Mr. Hodgson's name and address and the business in which he is engaged, that of card stamping and repeating for all textile fabrics and repeating for throw overs for fine French index, is printed in black, red and white, the figures being large enough to be easily seen in any part of a large room or office. Mr. Hodgson will send a copy of the calendar on application.

BRANCH HOUSES

The Cleveland (Sixth City) branch of the H. W. Johns-Manville Co. has recently been obliged to provide larger quarters for several of its subsidiary offices. The Columbus office and contract department are now located on the ground floor of the new seven-story fireproof Peters power building, 45 W. Long St., with large warehouse facilities half a block distant. The Toledo office and warehouse have been moved to 213 Water St. This office has just completed a pipe covering, stack lining and cork tiling job in the Second National Bank building, Toledo, which possesses many unique features. Other Cleveland branch sub-offices are located in Akron (717 Second National Bank building), Dayton (250 Fourth St. arcade), and Youngstown (502 Stambaugh building).

Resident representatives are stationed at Lima, Massillon, Greenville and other points in Ohio, also at Huntington and Parkersburg, W. Va. Their work is supplemented by a large corps of traveling men. Last, but not least, the Cleveland branch has just closed on a long-term lease for another larger warehouse on Front St. which, when remodeled, will give the branch larger and better storage and shipping facilities than ever.

FARBENFABRIKEN SUES THE AMERICAN SURETY CO.

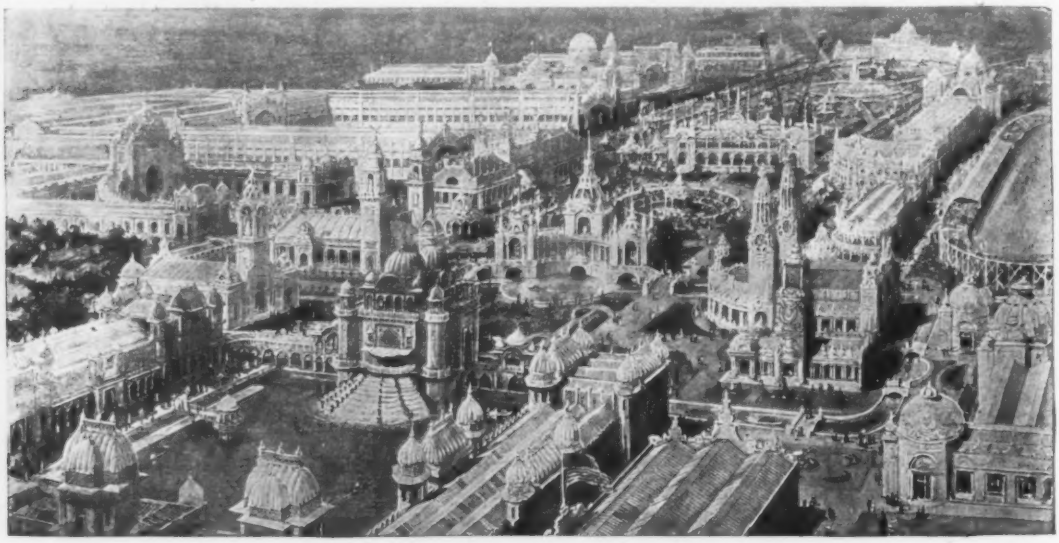
The American Surety Co. was made defendant in a suit filed on Saturday in the Supreme Court for $5,652 by Alvin V. Hupfer, as assignee of a claim of the Farbenfabriken Vormals Friedrich Bayer & Co., Elberfeld, large dyers, arising out of a suit for $1,200,000, in which the dye works was named as defendant last summer and John & James Dobson, manufacturers of cloths, carpets, woolens, etc., were the plaintiffs.

Through his attorney, Anthony Gref, the plaintiff alleges that on June 12, 1913, James Dobson, as surviving partner of the firm of John & James Dobson, brought an action against the German dye works for $1,200,000 and applied to one of the judges of the United States District Court for a warrant of attachment. In conformity with the law, the complaint states, the plaintiff in that action and the American Surety Co. filed a joint bond for $25,000 that they would be responsible for any sum up to that figure the dye works might suffer through the levying of the attachment. On July 18, 1913, the warrant of attachment was vacated, it is stated, but by reason of its issuance the dye works had been damaged to the extent of $5,652. This amount has been demanded of James Dobson, it is stated, but payment has been refused, so suit against the surety company was begun.

The action in which John & James Dobson and other plaintiffs sued the dye works alleged it was a combination in restraint of trade and charged the defendant maintained a trust and monopoly in Europe which they had extended to this country by organizing companies and agencies over which they exercised absolute control. The operators of the "trust," it was alleged, created an unjust, unlawful and damaging monopoly in the whole textile industry and that prices of all dyestuffs necessary to the textile business had been boosted in consequence.—Daily Trade Record.

THE ANGLO-AMERICAN EXPOSITION OF 1914

The year 1914 marks the completion of one hundred years of peace between Great Britain and the United States. This centennial anniversary will be celebrated at London next year by an exposition beginning in May and closing in October. Seldom if ever has there been an occasion that appeals so strongly to English speaking people at this celebration of a century of peaceful relations between the two great English speaking nations. The exhibition will not only be of great importance in its broad aspects to the people of both countries, but it will also prove a valuable means of developing the commercial and trade relations of the two nations.

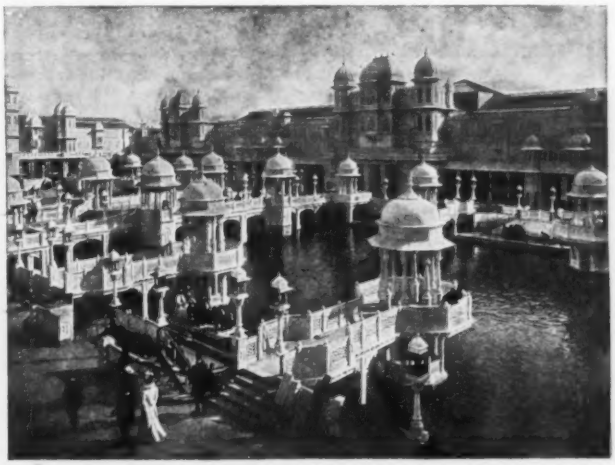


AVIATOR'S VIEW OF ANGLO-AMERICAN EXPOSITION GROUNDS

The accompanying aviator's view of the exposition grounds shows that the exposition is to be on a scale commensurate with the occasion. The textile building, shown in the illustration, is to be devoted exclusively to the textile industry. Textile manufacturers and machine builders will thus have unsurpassed facilities for bringing their products to the attention of the vast number who will

be in attendance. Elaborate plans are well underway to make the various exhibits as comprehensive as possible, and a great advantage is the fact that the buildings, all of fireproof construction throughout, are complete and actually ready for occupancy. This makes impossible the delay and inconvenience sometimes caused by the inability to finish construction work on time.

The undertaking is popular in origin and the promotion of the project has enlisted the cooperation of hundreds of men foremost in the affairs of England and this country. Organized under the auspices of H. R. H. The Duke of Connaught as patron, and H. R. H. The Duke of Teck, as Hon-



COURT OF HONOR AND AMERICAN TEXTILE BUILDING

orary President, the list of vice-presidents includes some of the most prominent members of the American Society in London, and influential Americans in Great Britain.

The American office of the Anglo-American Exposition are in the Woolworth Bldg., New York City, where full information can be obtained from Albert E. Kiralfy, Commissioner-General, regarding space and other arrangements.

STEPHEN C. LOWE DENIES REPORT

There was recently published in another textile paper a report that Stephen C. Lowe would relinquish the agency of John Hetherington & Sons, Ltd., Manchester, Eng., in the spring. When this came to the atention of the firm, they imediately cabled Mr. Lowe to make a denial of the rumor, which he has done.

ROPE DRIVE

The Merrimac Woolen Company, Lowell, Mass., has given the Dodge Manufacturing Company, Boston, an order for a 100 h. p. Dodge rope drive. This transmission will cover 48 and 40-inch sheaves, and 1,100 feet of Dodge Firmus Manila rope will be used.

NATIONAL ASSOCIATION OF WOOLEN AND WORSTED OVERSEERS

The thirty-first annual meeting of the National Association of Woolen and Worsted Overseers was held at the American House, Boston, Mass., Saturday, November 15, about three hundred members being present. The meeting was called to order by the president at 11 A. M. There were several applications for membership and the records show a steady increase in the total number.

An invitation was received from the Textile Exhibitors' Association to hold the next meeting of the Overseers' Assocation at Mechanics Building during the textile exhibition. It was voted to hold a special meeting and report later.

The following officers were elected for the coming year: President, Richard J. Hill; first vice-president, Edgar N. Taft; second vice-president, James Wilson; third vice-president, Joseph H. Driscoll; secretary, Walter Pickford; treasurer, Thomas Buchan. William E. Davison was elected secretary, and Thomas Buchan, treasurer of the beneficiary department.

After the election of officers the next business was the reading of papers which were submitted for prizes, three members of the Association reading very interesting articles.

"Essential Attention to Details," read by J. W. Williamson.

"Duties of the Overseer of Weaving," by Edward P. Dempsey.

"The Problem of Perfect Cloth," by J. B. Robinson.

The following is a list of those present:

CALIFORNIA

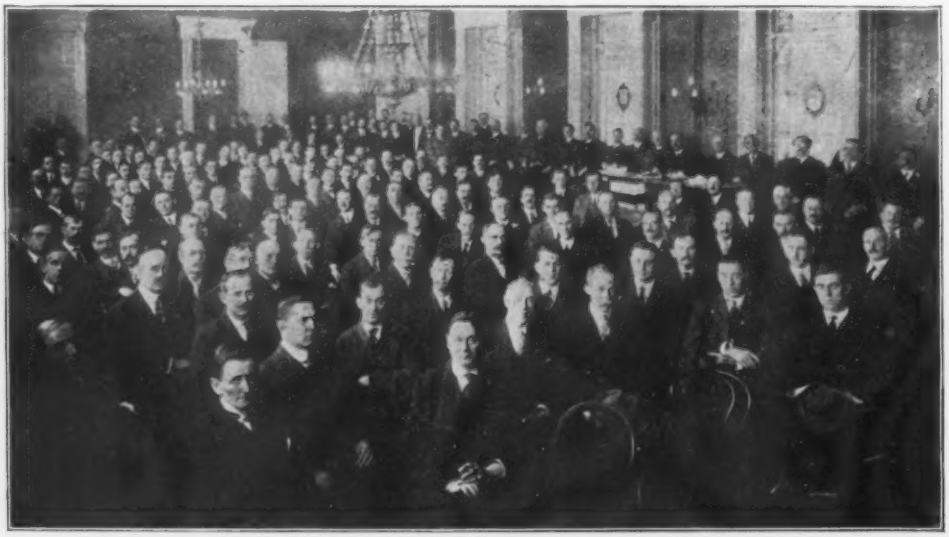
Albert Ainsley, Long Beach.

CONNECTICUT

Thomas Brooks, East Glastonbury.
John J. Burns, Moosup.
R. E. Bailey, Rockville.
John F. Carey, E. Glastonbury.
W. E. Davison, Putnam.
Charles J. Henault, Norwich.
Fred Hollingsworth, Norwich.
W. G. Jowett, Central Village.
John J. Lyons, Moosup.
Henry J. Maloney, Hartford.
W. H. Nettleton, Central Village.
Thos. Richmond, Putnam.
Albert E. Riley, Rockville.
S. S. Stiles, Middletown.
W. E. Thorp, Norwich.
James Walsh, Moosup.

MAINE

G. A. Mabbett, Newport.
R. A. O'Donnell, Bridgeton.
C. S. Garner, Holliston.
Andrew Gibson, No. Andover.
J. F. Geb, Franklin.
Benjamin Horsfall, Lowell.
Edward Heine, Uxbridge.
Herbert Ellis, Franklin.
M. J. Fagan, Concord Junction.
Fred Hough, Franklin.
Daniel J. Holland, So. Groveland.
O. F. Ireland, Somerville.
John Ingham, No. Billerica.
E. B. Flanagan, No. Bellingham.
Herman S. Morey, Methuen.
J. H. Lawlor, Lawrence.
John P. Leary, Northboro.
Frederick J. McEvoy, Fitchburg.
George R. Howarth, Careyville.
James A. Lapraik, No. Billerica.
Herbert Midgley, Worcester.
William Jowett, Southbridge.
Joseph N. LeRose, Cherry Valley.
James H. Hillings, Lowell.
Robert J. Harrington, Dalton.
William McKinnon, Farnumsville.
Walter Pickford, Clinton.
Theo. N. Parent, No. Adams.
Thos. Prendergast, Newton Lower Falls.
C. A. Partelo, Cordaville.
C. H. Philbrick, Worcester.
Ben Oldfield, Methuen.
D. G. Byars, Farnumsville.
J. W. Bullard, Rochdale.
Albert Birch, Somerville.
J. J. Barrett, So. Hadley.
Louis M. Allison, Worcester.
John Archer, Franklin.
John J. Morgan, Lowell.
Joseph E. Truesdell, Jefferson.
Peter Stitt, Maynard.
Frank Norris, Pittsfield.
Richard J. Ownes, Fitchburg.
E. F. McGlone, Uxbridge.
Chas. McCarthy, Lowell.
Walter Nieber, Holden.
A. C. Neff, Millbury.
Thomas Buchan, Hyde Park.
T. W. Biddles, Holyoke.
F. L. Babcock, Boston.



A GROUP OF WOOLEN AND WORSTED OVERSEERS

Archibald Ormiston, Bridgeton.
George Ormiston, Oakland.
John E. Ormiston, Old Town.
F. W. Phelps, Old Town.
Charles H. Spek, Fairfield.
C. A. Williamson, Foxcroft.

MASSACHUSETTS

A. F. Carmichael, Lawrence.
W. E. Chamberlain, Franklin.
John H. Crowley, Hyde Park.
M. J. Coughlin, Lowell.
James H. Cobb, Careyville.
Robert S. Dodds, Boston.
Vincent J. Degnan, Quinnapoxet.
Jos. T. Daley, Worcester.
John Dobbs, Lowell.
Thomas Doole, Lowell.
C. T. Donlevy, Boston.
Everett S. Eddy, Worcester.
George Farnsworth, No. Billerica.
James J. Faron, Worcester.
Charles H. Francis, Lowell.
Charles Fralich, No. Bellingham.
Thomas Goddard, Caryville.
A. W. Greenback, Uxbridge.
P. H. Gouet, Lester.
Asa Garth, Fitchburg.
C. S. Gove, Uxbridge.
John E. Graham, Lowell.
E. W. Keough, Middleboro.
Chas. A. Kennedy, Pittsfield.
F. S. Klebart, Dorchester.
C. M. Klebart, Uxbridge.
Frederick W. Kennedy, Lawrence.
J. G. Leith, Chelmsford.
John Lawton, Maynard.
E. G. Tainter, Wamesit.
R. D. Robinson, Lowell.
Ernest Rhodes, Lawrence.
F. J. Harney, Webster.
W. H. Hassett, Holyoke.
Arthur J. Hicks, Lawrence.
R. J. Hackett, Lowell.
James J. Morgan, Maynard.
F. L. McCarthy, Fitchburg.
Wm. McBride, No. Billerica.
John T. McCormack, Hyde Park.
Frank Manock, Lawrence.
D. P. Scribner, Waltham.
John C. Marley, Lawrence.
N. A. Moulton, Jamaica Plain.
W. R. McConachie, Uxbridge.
Joseph E. Army, Millbury.
Ernest Ainsley, Clinton.
Andrew Archer, Franklin.
James J. Rae, Worcester.
Fred Ransehausen, No. Andover.
J. H. Rile, No. Billerica.
A. G. Rodger, Saugus.
Ivar S. Borg, Chelmsford.
B. Southane, Lowell.
Thomas Southane, Lowell.
Thomas B. Smith, Worcester.
Henry Shaw, Leominster.
F. L. St. George, West Medway.
Arthur Slater, No. Andover.
Wm. M. Taylor, Northboro.
J. S. Turner, Lowell.
George H. Underwood, Lowell.
Hugh E. Wyer, Rochdale.
Wm. E. Wilson, Cambridge.
K. J. Whalen, Huntington.
R. G. West, Worcester.
Wm. F. Wicks, Haverhill.
J. W. Whitehead, Lowell.

NEW HAMPSHIRE

Frank W. Nash, Keene.
J. T. Patterson, Hillsboro.
Charles V. Browne, Pennacook.
W. A. Booth, E. Rochester.
Thomas Mullen, Franklin.
T. E. Moore, Hillsboro.
R. G. McBride, Hillsboro.
George Moore, Somersworth.
D. E. Lancaster, Somersworth.
Charles W. Lynch, Pennacook.
James Hirst, Peterboro.
F. J. Leibold, Pennacook.

A. E. Jones, Hillsboro.
Chas. E. Johnson, Newport.

NEW JERSEY

P. F. Hamlin, Somerville.
Chas. Whitehead, Newark.

NEW YORK

Martin H. Welch, Auburn.
E. F. Moore, New York.

OREGON

J. F. Doyle, Packwood.

PENNSYLVANIA

John F. Bolger, Philadelphia.
Charles North, Philadelphia.

RHODE ISLAND

H. S. Ringland, Providence.
Metrick Riendeau, Woonsocket.
F. E. Perkins, Woonsocket.
F. E. Petterson, Bridgeton.
Michael F. Quinn, Pascoag.
Martin O'Toole, Woonsocket.
Thomas J. Ryan, Pascoag.
R. W. Ringland, Oakland.
James O. Reynolds, Woonsocket.
J. H. Pickford, Carolina.
Patrick Purcell, Johnston.
M. Nelligan, Lafayette.
J. B. Bennett, Providence.
Ulrich Burke, Carolina.
Thomas H. O'Neil, Oakland.
George H. Bottomley, Esmond.
Chas. H. Attridge, Providence.
Frank W. Austin, Bristol.
Wm. Waterhouse, Providence.
Tom Parkin, Providence.
H. J. Metcalfe, Providence.
James Wilson, Providence.
J. G. Barnes, Providence.
Herbert Thompson, Lymansville.
Edward Tetley, Washington.
James A. Toop, Washington.
I. Ward, Providence.
Edgar M. Taft, Bridgeton.
R. C. Schortman, Providence.
Ernest A. Sutcliffe, Providence.
Henry L. Stewart, Lafayette.
Richard Thomas, Thornton.
Patrick J. Malone, Bridgeton.
John H. Gormley, Pawtucket.
Alfonse Gibson, Woonsocket.
Julian J. Guerin, Woonsocket.
Albert Gill, Providence.
Walter Gledhill, Providence.
F. P. Gallagher, Providence.
John Guerin, Woonsocket.
R. E. Greene, Mapleville.
T. H. Fraser, Glendale.
A. P. Foster, Potter Hill.
George F. Egan, Woonsocket.
Joseph T. Doland, Harrisville.
J. H. Driscoll, Manton.
Walter Devine, Providence.
Lewis H. Dicks, Woonsocket.
P. F. Doyle, Pascoag.
R. E. Chase, Washington.
D. F. Coe, Providence.
James C. Carmack, Providence.
Fred Carter, Pascoag.
Herman Ambach, Lymansville.
Henry Hogskiss, Providence.
Louis Carmack, Providence.
W. Rigney, Jr., Lafayette.
John F. Moore, Centreville.
S. J. Mellor, Lafayette.
H. B. Hazen, Davisville.
Wm. F. Hines, Pawtucket.
Richard J. Hill, Woonsocket.
Harry H. Hadgeman, Nasonville.
J. F. Lancaster, Pawtucket.
John J. Lenahan, Providence.
Thomas R. McClure, Woonsocket.
C. B. Jennings, Woonsocket.
James E. Leach, Lafayette.
C. M. Hurst, Providence.
Jacob J. Jones, Mapleville.
John Hetherman, Oakland.
John L. Jones, Centreville.
P. L. McBride, Woonsocket.
Chas. I. Keegan, Pascoag.
John T. Hardman, Pascoag.

VERMONT

John E. Gilroy, Winooski.
J. R. MacGregor, Bridgewater.

TREASURY DECISIONS UNDER THE CUSTOMS LAW

Following is a list of the decisions by the Treasury Department, the Board of General Appraisers and the Court of Custom Appeals in matters relating to the new tariff bill:

T. D. 33823. Directions for finding the number of yarn in cotton cloth to which are amended reference tables. The introduction of the tables states an allowance of 7 per cent. should be added to the dry weight of cotton as an allowance for moisture.

T. D. 33821. Schedule K, Tariff Act of 1913 construed. The department construes paragraph 310 to mean that only the articles and manufactures of wool provided for in paragraphs 286 to 309 of the present tariff act shall be subject to duty under the provisions of schedule K of the tariff act of August 5, 1909, until January 1, 1914, and not that all articles and manufactures of wool, which were classified under schedule K of the act of August 5, 1909, shall continue to be classified under the said schedule until January 1, 1914.

It follows from the foregoing that, in the opinion of the department, articles embraced in Schedule K of the former act, but which are not provided for in schedules other than Schedule K of the present act, are not covered by the provision in paragraph 310, and as paragraph 422 is in the free list of the present act, this paragraph became operative on October 4, 1913, and, therefore, press cloths composed of camel's hair, imported expressly for oil milling purposes and marked so as to indicate that they are for such purposes, and cut into lengths not to exceed 72 inches and woven in widths not under 10 inches nor to exceed 15 inches, and weighing not less than one-half pound per square foot, are entitled to entry free of duty.

T. D. 33865. Drawback on cotton, linen, silk and woolen fabrics. A drawback to J. Sachs & Co., of New York, is allowed under Paragraph O of section 4 of the tariff act of October 3, 1913, and the drawback regulations (T. D. 31695 of June 16, 1911), on textile fabrics of various materials, including cotton, linen, silk, wool, and fabrics containing a mixture of such materials imported in the piece and in a raw or unfinished condition and bleached, dyed, and finished for their account by M. Desaye & Co., of Passaic, N. J.

T. D. 33869. Standard samples of wool to be preserved. In view of the provisions in paragraphs 650 and 651 of the tariff act of October 3, 1913, for the free entry of wool of the sheep, hair of the camel and other like animals, the wool wastes, the standard samples for use in the appraisement and classification of wools embodied in T. D. 22681 will not be of special value after the 1st of December, 1913.

The collection of these samples, however, involved the expenditure of much time, labor and money, and as they are of great value to those interested in the subject of the production of wools you are hereby directed to preserve the cabinet of samples at your port.

T. D. 33907. Jacquard-figured manufactures of cotton. It would appear that there are several kinds of woven figured cotton cloth other than jacquard figured, viz., dobby, leno, swivel needle attachments (for lappert), (sic), etc., which in the opinion of the department are properly dutiable under paragraph 252 of the tariff act, and, while the provisions of paragraph 252 for woven cotton cloth by itself would cover the jacquard cottons under consideration, the department concurs in the views expressed by you that all jacquard goods are properly dutiable under paragraph 258. The first part of the paragraph enumerates "tapestries, and other jacquard-figured upholstery goods," while the latter part of the paragraph covers "all other jacquard-figured manufactures of cotton or of which cotton is the component material of chief value."

Recent Textile Patents

CLOTH LAYING Machine. 1,078,302. Simon Moritz, St. Louis, Mo.

COTTON for Dyeing and Bleaching, Preparing. 1,077,263. Albert J. Dronsfield, Providence.

DOFFING MECHANISM. 1,079,270. Sugden Shackleton, Keighley, England

DRYING and Treating Fabrics and Other Materials. 1,076,976. William M. Grosvenor, Grantwood, N. J.

DYEING MACHINE. 1,077,762. Robert J. Smith, Philadelphia, Pa.

DYEING MACHINE. 1,079,247. Joseph Hussong, Camden, N. J.

KNITTING MACHINE, Circular. 1,078,677. Harry A. Houseman, Philadelphia, Pa.

KNITTING MACHINE, Double Rib Warp. 1,078,914. Otto Gaebel, Apolda, Germany.

KNITTING MACHINE Needle. 1,077,600. George C. Egly, Philadelphia, Pa.

KNITTING MACHINE, Needle Picker for Circular. 1,078,676. Harold E. Houseman, Philadelphia.

KNITTING MACHINE, Stop-motion for Circular. 1,078,678. Harry A. Houseman, Philadelphia.

KNITTING MACHINES, Vertical-striping Attachment for Circular. 1,077,304. Frank W. Robinson, Reading, Pa.

LOOM SHUTTLE GUARD. 1,077,553. T. O. Pope, Columbus, Ga.

LOOM SHUTTLE-BOX Selecting Mechanism. 1,077,904. Walter A. Clark, Brantford, Ontario.

LOOMS, Electromechanical Warp Stop-motion for. 1,079,116. John F. Dustin, Fulton, N. Y.

LOOMS, Beam-lock for. 1,077,385. Carl E. Bailey, Manchester, N. H.

LOOM SHEDDING Mechanism. 1,077,757. Eppa H. Ryon, Waltham, Mass.

LOOMS, Pile-cutting Mechanism for Tuft-fabric. 1,077,242. Joseph T. Cyr, Worcester, Mass.

LOOM Thread-parter. 1,078,210. Jonas Northrop, Hopedale, Mass.

LOOMS, Automatic Stopping Device for Lace. 1,076,798. Thomas Thompson, Pawtucket, R. I.

LOOM, Pile or Tuft Fabric. 1,077,241. John A. Clarke, Worcester, Mass.

LOOM STOP Motion. 1,078,406. William H. Baker, Montreal, Canada.

LOOM HEDDLE-FRAME. 1,077,719. Jacob Kaufmann, Philadelphia, Pa.

LOOMS, Let-back for Take-up Mechanism of. 1,079,296. Simeon S. Jackson, Boston, Mass.

SHUTTLE, Hand-threading. 1,076,935. Robert N. Allen, Methuen, Mass.

SPINNING or Twisting Machines, Thread-guide for. 1,070,036. Lewis T. Houghton, Worcester, Mass.

SPINNING APPARATUS, Yarn. 1,070,180 Alonzo E. Rhoades, Hopedale, Mass.

WARP-END Supporting Means. 1,069,082. Howard D. Colman, Rockford, Ill.

WARP UNITING Machine. 1,069,081. Howard D. Colman, Rockford, Ill.

THREAD CUTTING Machine. 1,072,503. Edward Riley, Spokane, Wash.

TEXTILE MACHINE. 1,071,069. Carl Marx, Lambrecht, Germany.

THREADS, Bands and Filaments, Manufacturing Artificial Lustrous. 1,073,891. Friedrich Dietler, Kelsterbach-on-the-Main, Germany.

TUBULAR FABRICS, Machine for Making. 1,072,984. Anker Petersen, Boston, Mass.

WARP THREADS, Apparatus for Applying Stop Motion Detectors to. 1,072,103. John F. Dustin, Lawrence, Mass.

WEAVING FRAME. 1,071,277. Frank Thomason, Dimiao, Philippine Islands.

WINDING MACHINE. 1,072,157. Marinus Pepling, Newark, N. J.

WINDING MACHINE. 1,071,248. John Mackie, Willimantic, Conn.

WINDING MACHINE, Fabric. 1,073,946. David Bain, Passaic, N. J.

WOVEN FABRIC. 1,071,143. Arthur J. Cumnock, Rye, N. Y.

YARN RESIDUES from Bobbins, Spools and the Like, Means for Removing. 1,072,468. Paul Jeanmaire, Kollnau, Germany.

RECENT TEXTILE TRADE-MARKS REGISTERED

70,879. Handkerchiefs. Mark: No. 79. Owner, Heller & Long, New York.

70,883. Mercerized Thread and Spool Cotton. Mark: O.K. Owner: Sea Island Thread Co., New York.

71,104. Silk crape. Mark: Crepe Georgette. Owner: Haas Bros., New York.

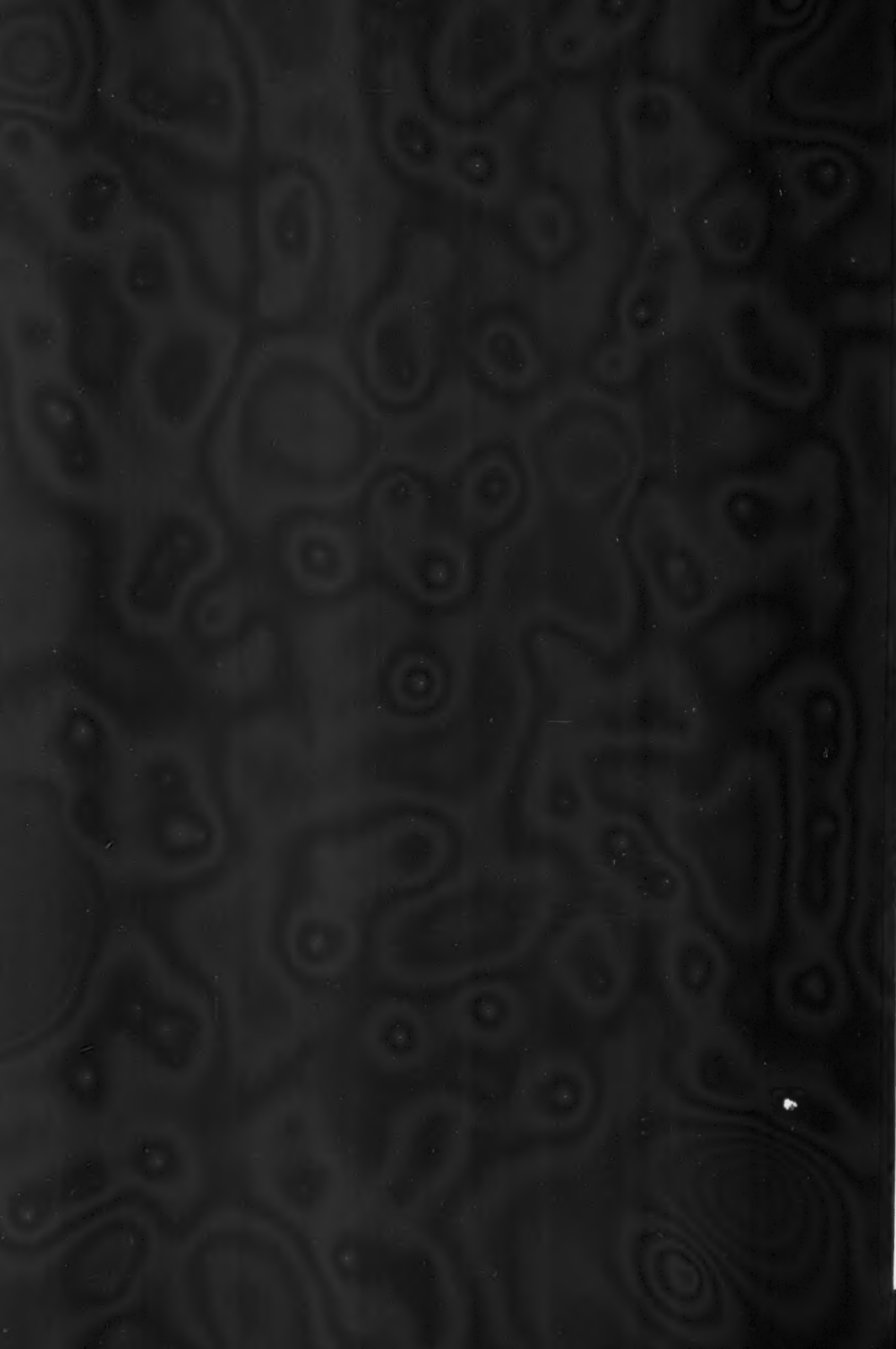
72,008. Underwear. Mark: Knitsook. Owner: Lawrence Mfg. Co., Lowell, Mass.

72,593. Textile rugs, carpets, etc. Mark: Walk On. Owner: D. H. Coplon & Co., Buffalo, N. Y.

72,673. Flannel and woolen piece goods. Mark: Lamsdown. Owner: Daniel W. Farnsworth, Montclair, N. J.

72,779. Yarns and threads. Mark: Dyconett. Owner: Dexter Yarn Co., Pawtucket, R. I.

67,853. Spool silk and mercerized thread. Mark: Bull Moose. Owner: Peerless Spool Silk Co., New York.



C. E. RILEY COMPANY

65 Franklin Street, .. BOSTON, MASS.

COTTON AND COTTON GOODS YARNS

DIRECT IMPORTERS OF EGYPTIAN COTTON

COTTON WOOLEN WORSTED MACHINERY

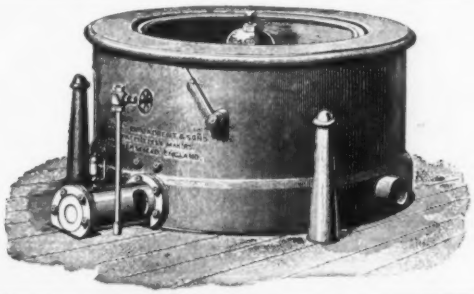
Thomas Broadbent & Sons,

Huddersfield, Eng.

PATENT DIRECT STEAM DRIVEN

HYDRO-EXTRACTORS

OVER 3500 IN USE. ALSO ELECTRICALLY DRIVEN



SUSPENDED ON LINKS. REQUIRING NO EXPENSIVE FOUNDATIONS.

C. E. RILEY COMPANY, Sole Agents 65 Franklin St., Boston, Mass.

Machines Kept in Stock in Boston

Cotton Belts
Leather Belts
Gandy Belts
Camel Hair Belts
Balata Belts
Rubber Belts
Rope Drives

All Need Cling-Surface

Here is an unbiased recommendation for Cling-Surface through the January Woodworker:

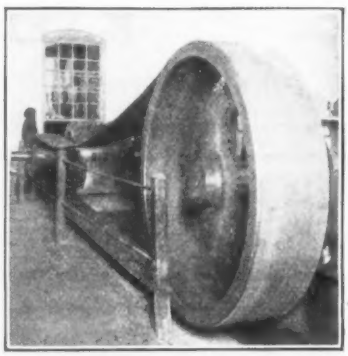
"Have had in use for fifteen months on a 5 kw. dynamo, a 5 in. three ply cotton belt which has proved very satisfactory.

"Before putting belt to work I stuff it full of Cling-Surface and find I have a belt which handles the load in even ***better shape than a first-class leather belt*** *and at just about* ***one-third the cost.***

"I also use the same kind of belt and ***method of treating*** *in light feed belts on various machines* ***with perfect satisfaction.***"

The man who wrote the above (name unknown to us) certainly thinks well of Cling-Surface, but so does *everybody who uses it.*

All belts are improved by Cling-Surface treatment.

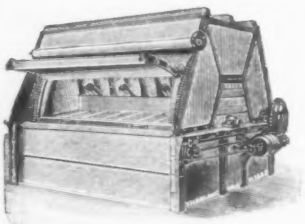


Investigate Cling-Surface personally and you will find it a real essential in your textile mill. Let us have a trial order and if the Cling-Surface doesn't make good the trial won't cost a cent. Ask for our literature at least.

Cling-Surface Co 1051 Niagara St Buffalo N Y

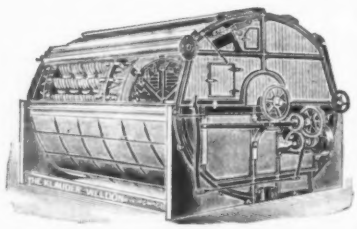
New York Boston Chicago Denver Memphis Etc

65



Raw Wool and Cotton Machine.

MACHINES
sold on
2 MONTH'S TRIAL
YOU
TAKE
NO
RISK

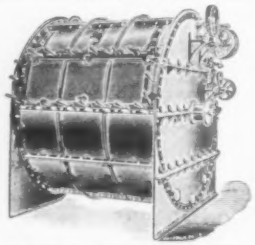


Skein and Slubbing Machine.

KLAUDER-WELDON DYEING MACHINE COMPANY

HUDDERSFIELD, ENGLAND. *AMSTERDAM, N. Y.*

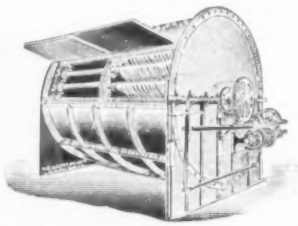
Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



Sulphur Hosiery Machine.

Special Machines for Sulphur Colors

WILL EARN THEIR COST IN LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



Sulphur Skein Machine.

Buyers' Index

This department is conducted for the benefit of our subscribers. The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisements. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in the classification here given such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources. Advertisers whose names do not appear under headings to which they are entitled will please notify the publishers.

Accountants and Systematizers.
Gunn, Richards & Co.

Air Moistening System.
——See Humidifying Apparatus.

Architects and Mill Engineers.
Cramer, Stuart W.
Dyer, W. E. S.
Ferguson, John W.
Main, Chas. T.
Myrick, J. W. H.
Weston, Robert Spurr.

Asbestos Products.
Johns-Manville Co., H. W.

Asphalt Tanks.
Graver Tank Works, Wm.
Scaife, W. B., & Sons.

Automatic Feeds for Cotton and Wool.
Harwood, Geo. S., & Son.
Leigh & Butler.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Saco-Lowell Shops.
Sargent's, C. G., Sons.
Schofield, Wm., Co.
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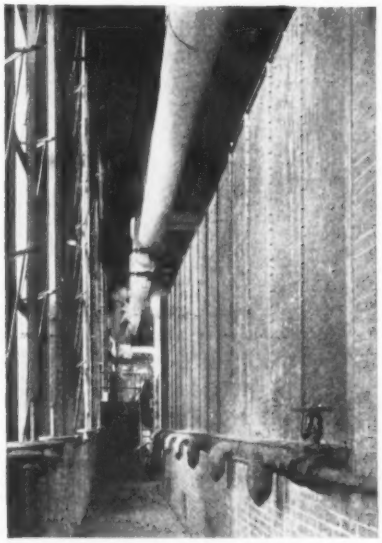

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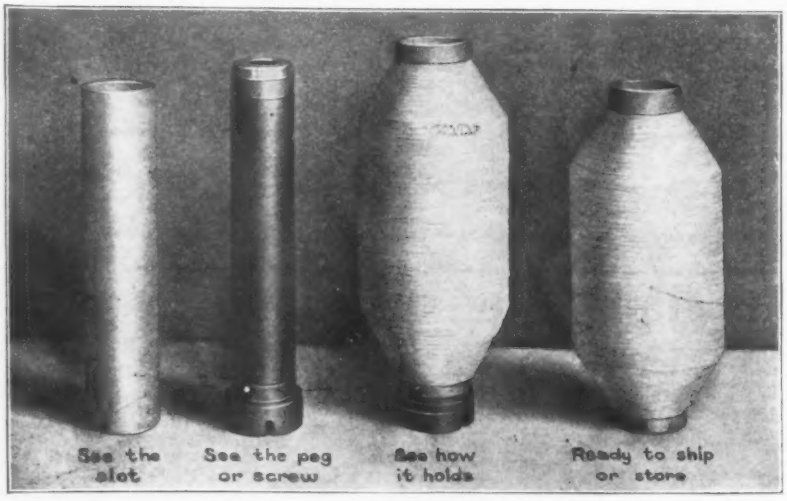

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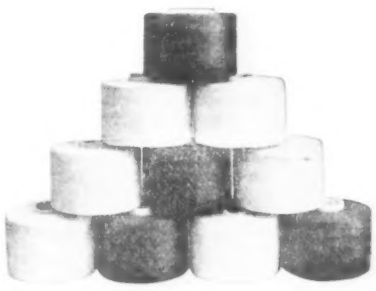

Publisher's Page

"Principles of the House"

When recently adding another member to the selling staff of the Lord & Nagle organization, it was of course necessary to instruct him as to the policy of the concern and what he could and could not do in his dealings with customers. It occurred to us that this might be of some interest to our customers, and at the risk of intruding our own affairs, we publish the instructions herewith.

* * *

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Don't "knock" your competitors. There are enough good points about our own publications to talk about. If you have to speak about competition at all, say a good word for those who deserve it and nothing about the others.

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This is a special department for those who wish to buy or sell second-hand machinery, mills or mill sites, patents, etc., and for such advertisements as "Help" or "Situations Wanted." A special low rate is charged, viz., $1.00 for one-half inch, single column; $2.00 for one inch, single column, and in the same proportion for larger space. By measuring these advertisements and counting the words you will see what space is needed for your announcement. No advertisement accepted for less than $1.00. Remittance should accompany the order. No extra charge for forwarding replies sent in care of the Textile World Record.

Address: Want-Ad Dept., Textile World Record, 144 Congress Street, Boston, Mass.

MANUFACTURERS OF COTTON

Jute or Hemp Twines, Sheeting or Duck, wishing sales agent in the Chicago and Milwaukee market. Please correspond with "Cotton Sales Agent," Textile World Record, Boston, Mass.

SPECIAL MACHINERY AND TOOLS

Of all kinds designed and built. Inventions developed. S. C. Carpenter Drafting and Engineering Co., 49 Oakland Terrace, Hartford, Conn.

Winders For Sale

Three Abel Winders, twelve reels on each side, twenty-four spindles in all. Wax rigging attachment. Address, Germania Knitting Works, 440 Canal St., New York

Knitting Mill Superintendency Wanted

A young man who has had broad experience in all branches of knitting underwear; who thoroughly understands knitting and sewing machinery; who is a competent executive, wishes to make new connection as superintendent of a knitting mill. Address, "X. Y. Z.," Textile World Record, Boston, Mass.

WANTED

Position As Boss Finisher.—All kinds of cotton goods, back filling a specialty, capable of handling help, fifteen years experience both in Scotland and this country. Well up in Schreiner Embossing and Friction Calender work. Address "Boss Finisher," Textile World Record, Boston, Mass.

Roll Logs

BEST QUALITY

ROCK MAPLE LOGS

For Bleaching, Dyeing and Printing Rollers

Prompt delivery in any quantity. All consignments made direct from Adirondack Woods. Write for prices.

Geo. E. Hartwell, Northville, N. Y.

HARDING & FANCOURT, Inc.

Kensington Soap Works

Soaps of Quality, Turkey Red Oil, Tuscan Softener, Soluble Oils and Olive Oil

516-18 So. Delaware Ave. PHILADELPHIA

Dyer and Wet Finisher Wants Position

A German, 28 years old, strictly temperate, wants position as Manager or Assistant. Have had experience in all kinds of piece dyes, also raw stock, wool and cotton. Willing to go anywhere at any time. Best of references. "German," care Textile World Record, Boston, Mass.

A NEW YORK MANUFACTURER

making high priced sweater coats for the retail trade, wishes to correspond with a suitable party, ***who is capable of taking care of the selling end*** at Chicago and the West, or with a jobber who could sell such merchandise. Address: "N. Y. Manufacturer," Textile World Record, Boston, Mass.

WE BUY AND SELL

U. S. Finishing, Fall River and other New England Mill Securities. Also Standard Oil stocks and public utility shares. Write for special report on American Marconi Wireless Co. Now controls wireless work in U. S. Operating 600 stations. Have Six Million Dollars Treasury reserve. Stock paying dividends: unusual profit possibilities. Jordan & Bertrand, Brokers, 56 Pine street, N. Y. City.

FOR SALE

12 FOSTER WINDERS

Slightly used

Also 3 Eastwood Quillers

Address "Winders," Textile World Record, 120 Liberty St., New York City.

For Sale

New Willimantic Automatic Machine, equipped for 200 yards to 2400 yards, and 12000 yard Bull Spools. Fully equipped, $1200.00. Address, "Automatic," Textile World Record, Boston, Mass.

For Sale—Cotton Mill

The plant of the Hawkinsville Cotton Mills is offered for sale by the bondholders who hold the property.

Property consists of one two-story brick mill house with tower, built on plan providing for enlargement, full equipment of machinery for making yarn and sheeting. (Steam Mill), three thousand spindles, sprinkler system fire protection, one six-room superintendent's dwelling, fourteen four room frame dwellings. Real Estate consists of about nine acres in the thriving town of Hawkinsville close to business center. Mill is reached by side tracks of three railroads and its on navigable river. Mill built in 1900 and plant cost $100,000.00, can be bought for less than half that amount. Write for complete description of property and list of machinery; booklet of town of Hawkinsville showing photo of mill also furnished. Call on or address

E. J. HENRY

Trustee for Bondholders

HAWKINSVILLE, GA.

FRENCH YARN

A French spinner with wide experience in the manufacture of woolen and worsted yarns, fancy, gassed, grenadine yarns in fine counts, operating a large number of spindles, wishes to arrange with an importer or manufacturer's agent to dispose of the product in America. Address "H. B. C. 18" Textile World Record, Boston, Mass.

FOR SALE

Two 30" Cylinder Garnet Machines. These machines were entirely reclothed three months ago and are in perfect running order. Price $1000.00 each. For further particulars address Barcalo Manufacturing Co., Buffalo, N. Y.

I AM IN A POSITION TO SELL

CLAY ALBUMEN

to textile manufacturers. My temporary address in Detroit, Mich., is 748 Canton Ave. Factory and main offices are located in Karlin at Prag, Austria. Address "J. R.," Textile World Record, Boston, Mass.

Jacquards For Sale

Ten 1218 hook double lift single cylinder Crompton & Knowles Jacquards all in fine condition. These are complete with adjusting shoes, card cradles and connecting rods. Will sell less than half price. Address NIAGARA TEXTILE COMPANY, Lockport, N. Y.

CHEAP ELECTRIC POWER

To those wanting Electric Power for manufacturing purposes we have available building plots, also a building 193 ft. x 40 ft. for rent at low cost with cheap power, in Shawmut, Me., six miles from Waterville. Good shipping facilities. For details apply to

Shawmut Manufacturing Company

41 Park Row, New York City

The Logical Place To Advertise Second-Hand Machinery

The Textile World Record carries more advertising of textile machinery, equipment and supplies than any other textile periodical. Very many of its 400 advertisers use no other.

The reason for its continued success as an advertising medium for the sale of textile machinery is that:

Its subscribers buy about $250,000,000 worth of textile machinery, equipment, and supplies (not including raw material) each year.

Being so successful for new machinery it should also prove profitable for the advertising of second-hand machinery, and for the sale of anything of special interest to men in the mill who are held responsible for results, e. g., mills, power-plant equipment, supplies, etc.

Therefore, if you have any textile machinery, mill or power-plant equipment that you do not intend to use again, the Textile World Record offers you the best market for its disposal at a fair price. An advertisement this size costs only $16.00 an issue. For further information address:

Classified Advertising Department

Textile World Record 144 Congress Street Boston, Mass.

Situations Wanted

Manufacturers who are in need of Superintendents or Overseers for any department of mill work may learn of suitable men upon application by mail or telephone to C. T. DONLEVY, care Textile World Record, 144 Congress Street, Boston., who will give prompt attention to their requirements without charge.

Overseer of Bleaching, mercerizing or aniline black dyer in bleachery; has worked on all kinds of cotton piece goods, lime and caustic bleaching, also colors and wash dress goods; familiar with all kinds of bleaching, mercerizing and dyeing machinery; 40 years of age; good reference.
6031, Textile World Record, Boston, Mass.

Overseer of Knitting, sewing machine fixer, or superintendent in small plant; has worked on all kinds of ribbed goods, ladies' and men's; fancy knit goods, sweaters, etc.; familiar with most all makes of circular ribbed machines such as Nye & Tredick, Scott & Williams, Wildman and Snyder & Fisher; 39 years of age, married; will not go to Me., N. H., or Vt.; good reference.
5099, Textile World Record, Boston, Mass.

Superintendent of Knitting Mill, or would accept position as overseer of knitting; has worked on everything in the sweater and shawl line; familiar with Donner, Baschel, Dubied, Grosser, Claes & Flentje, Seyforth, hand and full automatic machines; any kind of finishing and sewing machines; 40 years of age, married; good reference.
4927, Textile World Record, Boston, Mass.

Second Hand of Spinning in cotton mill; has worked on cotton yarn 1s to 80s and two ply; familiar with Dobson & Barlow, also Howard & Bullough machines; 27 years of age; good reference.
6059, Textile World Record, Boston, Mass.

Second Hand of Carding in woolen mill; has worked on blankets, fancy woolens, men's wear, dress goods, carriage cloths, kerseys, cassimeres and mohair goods; familiar with Davis & Furber, Lombard and Smith cards; 25 years of age; good reference.
6060, Textile World Record, Boston, Mass.

Overseer of Dyeing in woolen mill, or assistant dyer in large mill; has worked on cotton and worsted yarns, fancy dress goods, serges, raw wool, slubbing and carpet yarns; familiar with all kinds of dye kettles and vats; 24 years of age, married; will not go West, South or to Canada; good reference.
6061, Textile World Record, Boston, Mass.

Loom Fixer or small boss weaving position in woolen mill; has worked on woolen and worsted goods; familiar with Crompton & Knowles looms; 40 years of age; will not go to Mass., West, South, or Canada; good reference.
6062, Textile World Record, Boston, Mass.

Grinder or Second Hand of cotton card room; has worked on American cotton; familiar with Dobson & Barlow machines; 23 years of age; will not go to N. H., Vt., Pa., N. J., West, South or to Canada; good reference.
6063, Textile World Record, Boston, Mass.

Superintendent, Overseer of Finishing or sewing machine adjuster; has worked on light and heavy weight underwear, very fine spring needle, in fact, all kinds; familiar with Union Special, Merrow, Singer, Industrial, Wheeler & Wilson, Willcox & Gibbs, Standard, Arnold machines, most every style and class; 24 years of age, married; good reference.
6064, Textile World Record, Boston, Mass.

Superintendent of Shoddy Plant; would consider position as superintendent of woolen yarn mill, or traveling salesman; has made yarns and shoddies, also about everything in woolen line; good knowledge of woolen manufacturing, also knitting; familiar with all kinds of machinery; 47 years of age, married; will not go West, South or to Canada; good reference.
6068, Textile World Record, Boston, Mass.

Overseer of Carding or second hand in cotton mill; has worked on all kinds of goods; familiar with all makes of modern machinery; 31 years of age, married; good reference.
6065, Textile World Record, Boston, Mass.

Overseer of Weaving or good fixing position; has worked on woolens, worsteds and shoe cloth; familiar with Crompton & Knowles, Crompton & Thayer, also Knowles side cam looms; 34 years of age, married; good reference.
6066, Textile World Record, Boston, Mass.

Overseer of Knitting in underwear or hosiery mill; has worked on both heavy and light goods; 20 years of experience on both spring and latch needle; familiar with most all makes of machinery; 40 years of age, married; prefers Canada or Southern States; good reference.
6067, Textile World Record, Boston, Mass.

Overseer of Finishing in knitting mill or sewing machine fixer; has worked on men's, ladies' and boys' union suits; has made some shirts and drawers; familiar with Union Special, Singer, Union, Metropolitan, Merrow, National, Button-Hole and Standard machines; 27 years of age, married; good reference.
6075, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; has worked on all classes of woolen and worsted goods; 40 years of age; will not go to Pa., South or Canada; good reference.
6076, Textile World Record, Boston, Mass.

General Manager of Hosiery Mill; has worked on misses' ribbed mercerized hosiery; familiar with Brinton & Wildman ribbers; Excelsior, Hemphill and Banner knitters; 50 years of age, married; will not go to Canada; good reference.
6077, Textile World Record, Boston, Mass.

Overseer of Knitting or fixer; has worked on fine cotton, wool, mercerized and silk underwear; familiar with Cooper spring needle circular and Scott & Williams machines; 24 years of age, married; good reference.
6078, Textile World Record, Boston, Mass.

Overseer of woolen or worsted finishing; has worked on kerseys, broadcloths, venetians, meltons, carriage cloths, cheviots, thibets, chinchillas, beavers, double face goods and worsteds; familiar with all kinds of finishing machinery; 42 years of age, married; will not go to Canada; good reference.
6079, Textile World Record, Boston, Mass.

Overseer of Cotton Carding, second hand or comber man; has worked on Peeler, Sea Island and Egyptian cotton; familiar with both carding and combing machinery; 34 years of age; will go to Massachusetts, Connecticut and Vermont; good reference.
6080, Textile World Record, Boston, Mass.

Superintendent of Cotton Mill, or superintendent of weaving; has worked on all kinds of fancies, corduroys, lenos, moleskins, cam work, etc.; familiar with the Crompton & Knowles gem looms; Crompton dobby and Whitin looms; also Saco & Pettee looms; 43 years of age; will not go to Maine; good reference.
6081, Textile World Record, Boston, Mass.

Overseer or second hand of dyeing in cotton mill; would also consider position of assistant chemist; has worked on ginghams, indigo goods, developed and direct colors, Bedford cords, drills, ducks, etc.; familiar with round tub vacuum machines, jig and padding machines; 24 years of age; good reference.
6082, Textile World Record, Boston, Mass.

Overseer of Dyeing in woolen or worsted mill; has worked on worsted, woolen, merino and cotton yarns; worsted and cotton shoddy, silk, rags, raw stock, also wool; worsted, union and cotton piece goods; familiar with Klauder & Weldon skein dyeing machines and Chattanooga vacuum dyeing machine for raw stock and skein dyeing; 39 years of age, married; prefers New England States; good reference.
6083, Textile World Record, Boston, Mass.

Boss Grinder, card setter or second hand in cotton mill; has worked on everything from waste to combed yarn; familiar with **English and American** machinery; 28 years of age, married; would like to go to Western States; good reference.
6084, Textile World Record, Boston, Mass.

Overseer of Weaving in woolen or worsted mill; has worked on all kinds of woolens, worsteds and fancy mixed worsteds; familiar with Knowles & Crompton looms; 37 years of age, married; will not go West or to Canada; good reference.
6069, Textile World Record, Boston, Mass.

Overseer of Knitting; has worked on all grades of half hose from 108-needle to 240-needle goods; familiar with Banner & Jencks knitting machines; Wildman & Huse cuff machines, also Hepworth and German looping machines; 41 years of age, married; will not go to Pa., West, South or Canada; good reference.
6070, Textile World Record, Boston, Mass.

Overseer of Dyeing in woolen mill; has worked on piece dyeing—wool, cotton, unions and silk; stock dyeing—wool and cotton; fast colors; familiar with all kinds of machinery; 28 years of age; good reference.
6071, Textile World Record, Boston, Mass.

Overseer of Burling and Sewing in woolen mill; has worked on all classes of goods; 36 years of age; will not go West, South or to Canada; good reference.
6072, Textile World Record, Boston, Mass.

Agent, Manager or Superintendent in woolen mill; has worked on all kinds of worsteds and woolens in men's wear, dress goods and overcoatings; familiar with all worsted and woolen machinery; 47 years of age; will not go West, South or to Canada; good reference.
6073, Textile World Record, Boston, Mass.

Overseer of worsted spinning, twisting, warping, winding, reeling, etc., in worsted mill; has worked on worsted single yarns up to 60s counts; has run yarns right through to warping; familiar with spinning, twisting, winding and warping machinery; 24 years of age; good reference.
6074, Textile World Record, Boston, Mass.

Overseer of Weaving in woolen mill; has worked on flannels, cassimeres, dress goods, worsteds and blankets; familiar with Crompton & Knowles and Crompton & Thayer looms; 36 years of age, married; good reference.
5985, Textile World Record, Boston, Mass.

Overseer of dyeing, dyeing and finishing or finishing of mohair linings; has worked on yarns, raw stock, piece dyes, knit goods, hosiery, woolen and cotton goods; familiar with all kinds of machinery; 49 years of age, married; good reference.
5986, Textile World Record, Boston, Mass.

Designer or assistant designer in woolen mill; has worked on men's wear, woolens and worsteds, cheviots, saxonies, overcoatings, vestings and checkbacks; 29 years of age; good reference.
5987, Textile World Record, Boston, Mass.

Overseer of Dressing, spooling, twisting or skein winding in woolen mill; has worked on all kinds of woolens and dress goods; familiar with Davis & Furber and Cleveland machines; 46 years of age, married; will not go West, South or to Canada; good reference.
6042, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; has worked on all grades of woolens and worsteds; familiar with all kinds of machinery; 38 years of age, married; good reference; will not go to Me., Pa., N. Y., N. J., West, South or to Canada.
6043, Textile World Record, Boston, Mass.

Comber Man in cotton mill, second hand or fixing job on speeders; has worked on all kinds of cotton goods; familiar with Woonsocket speeders and Nasmith combers; 24 years of age, married; will not go to Pa., N. J., West, South or to Canada; good reference.
5971, Textile World Record, Boston, Mass.

Overseer of Knitting, or superintendent of small plant; has worked on cotton, worsted, silk and lisle underwear; thoroughly familiar with Cooper, Tompkins, Campbell & Clute fine gauge work and Cooper rib top machines; 33 years of age, married; will not go to Pa.; good reference.
5972, Textile World Record, Boston, Mass.

Overseer of Weaving in woolen mill; has worked on woolen and worsted dress goods, men's wear, rain cloths, shoe tap cloth and novelties; familiar with Knowles broad and narrow looms, Crompton & Thayer, Clipper looms and English looms; 28 years of age; good reference.
5973, Textile World Record, Boston, Mass.

Overseer of Weaving or second hand in cotton mill, or would accept position of assistant superintendent; has worked on cotton damasks, corduroy, crochet, marseilles and satin quilts; towels (cotton, crash or pile), fancy dress goods, shirtings, narrow fabrics, both silk and cotton, bagging and duck; familiar with Crompton & Knowles, Draper, Stafford, Whitin, Mason, Wood and others; 26 years of age, married; good reference.
6025, Textile World Record, Boston, Mass.

Woolen or Worsted Designer, superintendent, or designer and superintendent; has worked on men's wear in woolens and worsteds, also all classes of ladies' dress goods; familiar with Crompton & Knowles, Hattersley, jacquard and all makes in fast looms; has had 17 years' experience as head designer; 37 years of age, married; good reference.
6011, Textile World Record, Boston, Mass.

Designer in Worsted Mill; has worked on all kinds of woolen and worsted fabrics; familiar with all kinds of woolen and worsted cloth machinery; 21 years of age; good reference.
6010, Textile World Record, Boston, Mass.

Overseer of Cotton Carding, cotton sampler or boss picker; is familiar with all kinds of cotton carding machinery; 29 years of age, married; prefers Rhode Island; good reference.
6023, Textile World Record, Boston, Mass.

Overseer of Carding on wool, cotton waste of all kinds or shoddy; has worked on sail yarn on cotton and wool, dress goods, suitings, and knitting yarns of all kinds; familiar with all makes of cards; 40 years of age, married; will not go South; good reference.
6009, Textile World Record, Boston, Mass.

Assistant Designer in woolen mill; has worked on gents' vests, overcoatings, suitings, woolen goods, ladies' dress goods, worsted goods and men's wear; familiar with the Knowles, Crompton, Thayer and English looms; 22 years of age; will not go West, South or to Canada; good reference.
6008, Textile World Record, Boston, Mass.

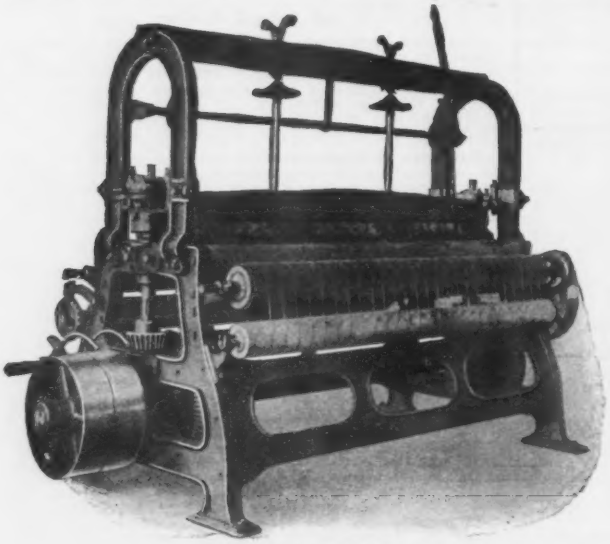
Overseer of Dyeing in woolen mill; has worked on raw stock, worsted yarns, piece dyes, woolens, worsteds and union piece dyes; familiar with all makes of dyeing machinery; 30 years of age, married; will not go South; good reference.
6026, Textile World Record, Boston, Mass.

Superintendent or designer of woolen mill; has worked on high and low grade woolens, fancy worsteds, piece dyes, manipulated cloths and union dyes; 34 years of age, married; good reference.
6024, Textile World Record, Boston, Mass.

Designer of artistic and original designs for textile and printed fabrics; has worked on cotton, wool and silk embroidery; 42 years of age; good reference.
5975, Textile World Record, Boston, Mass

Fixer in Hosiery Mill; has worked on cotton and mercerized hosiery; familiar with George D. Mayo and Invincible knitters; Beattie, Hepworth and German loopers, also Merrow welters; 35 years of age; good reference.
5976, Textile World Record, Boston, Mass.

CHINCHILLA MACHINE



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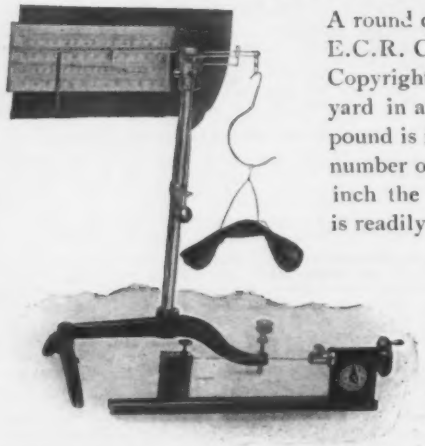
Universal Cloth and Yarn Analyzing Set



Universal Yarn Balance and Pocket Twist Tester

A round cut of 1/400 part of a square yard is made on the E.C.R. Cutter and by means of the Balance and SUTER'S Copyrighted Tables the weight of the cloth in ounces per yard in any width or the yardage per pound is found at once. Knowing the number of picks and warp threads per inch the "Average number of yarn" is readily obtained.

The yarn numbers of linen, woolen, worsted, cotton and silk yarns are obtained on the Universal Balance and the number of twists per inch in the yarn are given by the Pocket Twist Tester.

E. C. R. Cutter

THE EFFECT OF FREE WOOL

From the Market Letter of the First National Bank, Boston

Wool and wool wastes become free of duty on December 1, and the lower duties on woolen goods and on tops and yarns will take effect one month later.

The approaching removal of the wool duties has caused a restriction of entries thus far this year to about half the volume for the corresponding period a year ago, while foreign wools held in bond have accumulated to a total approximately equivalent to the amount entered.

The initial effect of the new tariff arrangements may be looked for in the releasing of a considerable part of this bonded wool. Further wool trade developments under the new law will depend in the main upon the success of our mills in withstanding foreign competition in the finished goods. Under the circumstances, the wool dealers have been cautious about commitments, and this attitude is likely to continue for some time. A factor in the situation is the unusual quantity of wool held on consignment, the growers having been unwilling thus far, in many cases, to accept the conservative offers made them.

Some pressure of competition is expected, especially in the finer goods, but it is generally felt that American mills will be able to withstand reasonably well any probable foreign rivalry in the great mass of medium-priced goods with which they are mainly concerned.

Whether the removal of the wool duties will mean an increasing proportion of foreign wools in domestic manufacture is a question to be decided in the main, aparently, by American sheep-growers. The mills will not be in a hurry to substitute foreign wools for those of domestic growth which they have been accustomed to use, but dissatisfaction with prices among the sheep-growers may cause an increasing tendency toward the selling of mutton rather than wool, and to such extent, at least, increased importation will be invited. Little inducement exists at the moment for any forcing of foreign wool on American users, the market here being on a lower range than abroad. The tendency, in fact, is in a contrary direction, for a few small lots of domestic wools have recently been sold for export.

An effort is in evidence on the part of foreign manufacturers to take advantage of the lower duty on tops, or combed wool, and the free admission of noils and wastes. Foreign top makers rely upon a difference in manufacturing cost sufficient to permit effective competition under an 8 per cent. duty. Whether this anticipation is well founded, however, remains to be seen, as some domestic manufacturers believe that they can make tops as cheaply as those abroad. Increased rivalry is likely also on yarns, especially of the finer grades.

The situation today in the wool trade is reminiscent of nineteen years ago, when wool became free under the Gorman-Wilson law. Business conditions now are much better than in the earlier period, both at home and abroad. On the other hand, the trade has had a shorter period to prepare for the change, for in the earlier instance twenty-two months elapsed between the election of a low-tariff government and the removal of the wool duties, while in this case the period intervening will have been only thirteen months. Another point of difference is the shorter period allowed between the effective date of free wool and that of the lower duties on manufactured goods—one month this time against four months in 1894.

For more than a year previous to the actual placing of wool on the free list, late in August of 1894, both receipts and sales in the Boston wool market reflected the state of uncertainty. Foreign receipts, especially, were sharply restricted during the greater part of this period. The taking effect of the new law was followed by a substantial increase in the foreign receipts, with not much immediate effect on the handlings of domestic wool. This condition predominated, in fact, until well toward 1896, that year witnessing a decided falling off in the handlings both of foreign and domestic.

It is of interest to note that the most pronounced effect of the Gorman-Wilson law in promoting importations of wool was not seen until shortly before the restoring of the duty under the Dingley law, in late July of 1897. During the earlier part of 1897 large quantities of foreign wool were brought in, free of duty, the importers securing substantial profits after the duty had taken effect. In the month of April foreign receipts reached the phenomenal total of 164,364 bales and bags, while in August, the month after the duty had taken effect, they were practically nil.

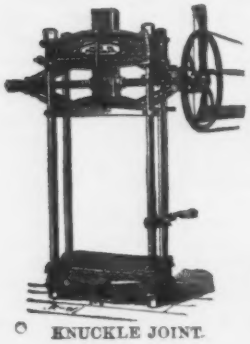
Subsequent figures, it may be added, indicate that the mills had become considerably overstocked in this period, for in 1898 both the foreign and domestic handlings were remarkably small. For some years afterward the foreign receipts showed only a gradual increase, and they have never since equalled the 1897 figure, while receipts of domestic wool have more than doubled the total of that year.

ORDER FOR ROPE DRIVE

The Dodge Manufacturing Company, Mishawaka, Ind., has secured an order from the Wilts Veneer Company, Plymouth, N. C., for a 150 h. p. American system rope drive. This drive will run from main lineshaft to a dryer room and has 68 foot centers. The driving wheel will be 48 inches in diameter and the driven wheel 40 inches. Seventeen hundred feet of Dodge Firmus transmission rope, one inch in diameter, will be used in ten wraps. Dodge also furnishes the necessary equipment to go with the wheels.

The Glendale Elastic Fabrics Co., Easthampton, Mass., will augment its power plant equipment by the installation of one 75 kv-a. and two 125 kv-a. alternating current generators with switchboard panels recently contracted for with the General Electric Company.

The Cabot Mfg. Co., Brunswick, Me., will add to the electrical equipment in its power plant a 600 kv-a. alternating current generator with switchboard panel, and has ordered the unit from the General Electric Company.



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Boomer & Boschert

BALING PRESSES

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Hydraulic or Knuckle Joint
Any Size Any Power

Boomer & Boschert Press Co.

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Southern Agent, A. H. WASHBURN, Charlotte, N. C.

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NEW ENGLAND BUTT COMPANY

304 PEARL STREET, PROVIDENCE, R. I.

BRAIDING MACHINERY

ALL STYLES AND KINDS FOR FLAT AND ROUND BRAIDS

SOLID SASH AND CURTAIN CORDS

SHOE AND CORSET LACES, BANDING

AND ALL BRAIDED FABRICS

THE DOUBLE, BURNISHED OR DIAMOND FINISHED
RIBBED RING
WHITINSVILLE
MADE BY THE WHITINSVILLE SPINNING RING CO.
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THE BEST THAT EXPERIENCE CAN PRODUCE, THAT MONEY CAN BUY

METAL
Bobbins
Spools
Beam
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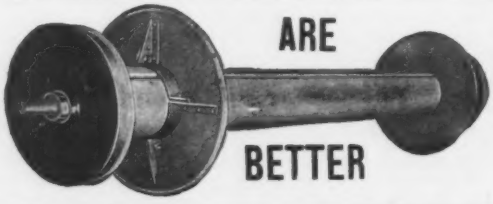
You can reduce your overhead expense



by using
STAMPED STEEL
Reels—Beams
Bobbins

Write for Catalogue No. 102

FRANK MOSSBERG CO., Attleboro, Mass.

MILL NEWS

Frank Suffel, president of the Northland Knitting Co., Minneapolis, Minn., suffered a badly lacerated leg recently in an automobile accident.

Harry Ball, formerly of Paris, Ont., Canada, but later with the Kingston Hosiery Co., Kingston, Ont., has accepted a position with the Allentown Eiderdown Co., Allentown, Pa.

C. B. Atkins has been appointed superintendent of the sweater department for Burns & Snow, manufacturers of gloves and mittens, Nashua, N. H. He was formerly employed at Newark, N. J.

W. S. Lowe has accepted the position of superintendent of the Parker Hosiery Mill & Dye Works, Portsmouth, Va.

Joseph Dequoy has accepted the position of overseer of knitting at the Yale Knitting Co., Malden, Mass.

Henry F. McDermott, overseer of knitting at the Yale Knitting Co., Malden, Mass., has severed his connection with that company.

Joseph Wood has been appointed overseer of weaving at the Dominion Textile Co., Ltd., Montreal, Canada, at their Mt. Royal branch. He comes from Lowell, Mass.

J. E. Carter has accepted the position of overseer of weaving at the Pomona Mills, Greensboro, N. C. He was formerly employed at the Eno Mill, Hillsboro, N. C.

H. E. Bates has succeeded D. R. Harriman as superintendent of the Monaghan Mill, Greenville, S. C. He was formerly employed at the Apalache Mills, Arlington, S. C.

J. E. Williamson has been elected secretary, treasurer and manager of the Holt-Morgan Mills, Fayetteville, N. C. He was formerly employed as manager of the Worth Manufacturing Co., Worthville and Central Falls, N. C.

J. C. Montjoy has been appointed superintendent of the Apalache Mill, Arlington, S. C. He was formerly employed at the Ottaray Mill, Union, S. C.

W. L. Wicker has accepted the position of overseer of beaming and slashing at the Aurora Mill, Burlington, N. C. He was formerly employed at the Patterson Mill, Roanoke Rapids, N. C.

U. A. Neese has accepted the position of overseer of carding and spinning at the King Cotton Mill, Burlington, N. C. He comes from Haw River, N. C.

P. Sparks has been appointed superintendent of the Park Cotton Mills, La Grange, Ga. He comes from Shawmut, Ala.

H. D. Lockwood succeeds Robert J. Edwards as treasurer of the Bates Manufacturing Co., Lewiston, Me., and the Edwards Manufacturing Co., Augusta, Me. Mr. Lockwood was assistant treasurer of the Pacific Mill, Lawrence, Mass.

Courtland C. Earle has accepted the position of selling representative for the Howard & Bullough American Machine Co., Pawtucket, R. I. He was formerly employed as overseer of carding at the Hebron Manufacturing Co., Hebronville, Mass.

Thomas M. Corcoran has succeeded his father, the late Edmond Corcoran, as superintendent of the Shackamaxon Mill, Philadelphia, Pa.

Robert Bingham, overseer of finishing at the Wood Worsted Mill, American Woolen Co., Lawrence, Mass., has severed his connection with that company.

Paul G. Wetstein has accepted the position of overseer of weaving at the Cocheco Woolen Manufacturing Co., East Rochester, N. H. He was formerly employed at the French River Textile Co., Mechanicsville, Conn.

Harry D. Hewett, superintendent of the Derby Worsted Co., Derby, Conn., and Abraham Novitzky, treasurer of this company, have severed their connection with that company.

Joseph Tellier has secured the position of overseer of weaving at the Paragon Worsted Company's branch mill at Woonsocket, R. I., which mill was formerly operated by Sayles & Prendergast.

H. F. Govin has been appointed superintendent of the Derby Worsted Co., Derby, Conn. He comes from the Mianus Manufacturing Co., Coscob, Conn.

Thomas Igo, for a number of years overseer of the spinning department at the Cocheco Woolen Manufacturing Co., East Manchester, N. H., has resigned to accept a similar position with the Bound Brook Woolen Co., Bound Brook, N. J.

E. Mc D. Baechtel, superintendent of the Blue Ridge Knitting Co., Inc., Hagerstown, Md., has resigned to accept a similar position at Nicholsville, Ky.

Charles F. Libby, formerly superintendent of the Shaw Stocking Co., Lowell, Mass., has been offered a position in a large Canadian hosiery mill.

J. C. Tibbetts, chemist and dyer at the Lawrence Dye Works, Lawrence, Mass., has resigned.

William H. Ryder, overseer of finishing at the Lawrence Dye Works, Lawrence, Mass., has severed his connection with that company.

Frank Ward has reentered the employ of the National Knitting Co., Milwaukee, Wis., as overseer of carding and spinning.

Albert Ainley, overseer of weaving at the Coronet Worsted Co., Mapleville, R. I., has severed his connection with that company. He has accepted a similar position at Long Beach, Cal.

Thomas Kiley has accepted a position as foreman of the bleaching department at the Greenwich Bleachery, East Greenwich, R. I. He has been employed for over twenty-five years at the Sayles' Bleacheries, Saylesville, R. I.

John Vernon, overseer of weaving at the Narragansett Mill, Fall River, Mass., and William Bradshaw, second hand in the weaving department, have severed their connection with that company.

James R. Garnett has accepted the position of overseer of finishing at the Cocheco Woolen Manufacturing Co., East Rochester, N. H. He was formerly employed at the Oakland Woolen Mills Co., Oakland, Me.

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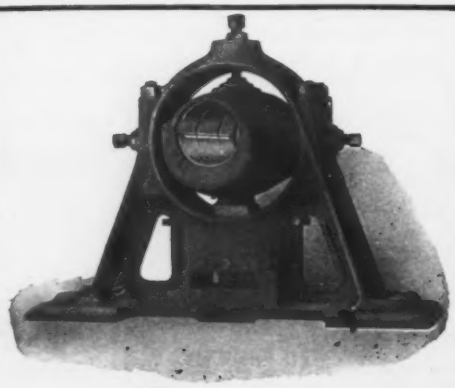

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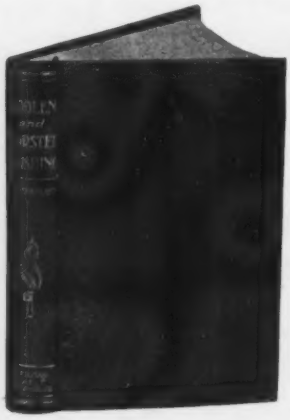

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MILL NEWS

Fred P. Harmon, overseer of finishing at the Cocheco Woolen Manufacturing Co., East Rochester, N. H., has severed his connection with that company.

Arthur C. Bigelow has been elected president of the Philadelphia Wool & Textile Association, Philadelphia, Pa.

Thomas Newey has accepted the position of overseer of bleaching at the Saxony Knitting Mills, Needham Heights, Mass. He was formerly employed at the Newton Mills, Newton Upper Falls, Mass.

Abraham Senior, for the past six years overseer of the bleaching department at the Saxony Knitting Mills, Needham Heights, Mass., has severed his connection with that company.

T. W. Haddle has accepted the position of overseer of spinning, spooling and warping at the Martel Manufacturing Co., Egan, Ga. He comes from Newry, S. C.

John Mahoney has accepted the position of overseer of dyeing at the Stonewall Cotton Mills, Stonewall, Miss. He was formerly employed at the Locke Mill, Concord, N. C.

H. C. Dresser has been appointed general manager of the Middleburg Mills, Batesburg, S. C., and the Martel Mills, Egan, Ga. He was formerly employed at the Oconee Mills, Westminster, S. C.

W. W. Cobb has accepted the position of overseer of spinning at the Monarch Mills, Union, S. C. He was formerly employed at the Belton Mills, Belton, S. C.

Lester Lytton has accepted the position of overseer of carding at the new Highland Cotton Mills, High Point, N. C.

W. H. Talbert, overseer of finishing at the Burlington Mill, American Woolen Co., Winooski, Vt., has accepted a similar position at the Black River Woolen Co., Ludlow, Vt.

Frederick Halterman has been appointed general manager of the Derby Worsted Co., Derby, Conn. He comes from Passaic, N. J.

Fred Harmon has accepted the position of overseer of finishing at the Talbot Mill, North Billerica, Mass. He was formerly employed at the Cocheco Woolen Manufacturing Co., East Rochester, N. H.

Henry Howard, assistant superintendent of the Tingue Manufacturing Co., Seymour, Conn., has been apointed superintendent to succeed the late Thomas F. Burke.

Nelson Tapin has accepted the position of second hand of ring spinning at the Dwight Manufacturing Co., Chicopee, Mass. He comes from Holyoke, Mass.

John P. Lockwood, overseer of weaving at the Ashtabula Worsted Co., Ashtabula, O., has severed his connection with that company.

Thomas Hart, Jr., has accepted the position of overseer of weaving at the Coronet Worsted Co., Mapleville, R. I. He was formerly employed at the Yantic Woolen Co., Yantic, Conn.

Edward C. Russell has accepted the position of overseer of finishing at the Lincoln Woolen Co., Camden, Me. He was formerly employed at the Rockville Worsted Co., Rockville, Conn.

Fred Langley has accepted the position of overseer of spinning at the Patrick-Duluth Woolen Mills, Duluth, Minn. He comes from Pittsfield, Mass.

Frank Porter has accepted the position of overseer of carding at the Hebron Manufacturing Co., Hebronville, Mass. He comes from Providence, R. I.

Peter Eberhart has accepted the position of overseer of finishing at the Patrick-Duluth Woolen Mills, Duluth, Minn. He comes from Worcester, Mass.

George Copeland has accepted the position of overseer of weaving at the Lebanon Mill, American Woolen Co., Lebanon, N. H. He was formerly employed at the Bound Brook Woolen Mills, Bound Brook, N. J.

William B. Plunkett, treasurer of the Berkshire Cotton Manufacturing Co., Adams, Mass., and his son, Theodore R. Plunkett, are spending a short time at their cotton plantation in Mississippi.

Carl Foster, purchasing agent for the New England Cotton Yarn Co., New Bedford, Mass., has severed his connection with that company. Mr. Foster is to open a cotton broker's office in New Bedford.

Thomas Hanson, overseer of spinning at the Tilton Mill, Tilton, N. H., has resigned to accept a similar position with John Dobsen, Falls of Schuylkill Mill, Philadelphia, Pa.

George E. Walls, overseer of carding at the Newmarket Manufacturing Co., Newmarket, N. H., has resigned his position with that company.

Herbert Galusha has accepted the position of overseer of spinning at the Franklin Mills, Franklin Falls, N. H.

Edward Welch, overseer of carding at the Globe Woolen Co., Utica, N. Y., has secured a similar position with the Allen Woolen Mills, Rochester, N. Y.

Lawrence Oberliss, overseer of spinning at the Globe Woolen Co., Utica, N. Y., has accepted a position as overseer of spinning on the night force at the Allen Woolen Mill, Rochester, N. Y.

Albert Hughes, formerly loom fixer at the Allen Woolen Mills, Rochester, N. Y., has been appointed night overseer of weaving.

Walter D. Yeaton has accepted the position of second hand of finishing at the Saxton's River Woolen Mills, Saxton's River, Vt. He comes from Pittsfield, Mass.

Frank A. Duff has accepted the position of overseer of wet finishing at the Standish Worsted Mills, Plymouth, Mass. He was formerly employed at the Burlington Mills, Winooski, Vt.

A. C. Marsh has been appointed manager of the Ypsilanti Underwear Co., Ypsilanti, Mich. He was formerly employed at the Mercury Mills, Hamilton, Ont., Canada.

TEXTILE BOOKS

THE following list contains the titles of some of the textile books which we recommend. We carry these in stock for prompt delivery. Our full descriptive catalog, giving lists of practically all textile books published in the English language, with a brief synopsis of contents, will be mailed free.

General Subjects

Advanced Textile Design, *Watson*	$4 00
Art of Soap Making, *Watt*	3 00
Calculations in Yarns and Fabrics, *Bradbury.*	1 25
Carpet Manufacture, *Bradbury*	3 00
Color in Woven Design, *Beaumont*	6 00
Design Texts, *Umpleby*	2 50
Drying by Means of Air and Steam, *Hausbrand*	2 00
Flax, Hemp and Jute Spinning and Twisting, *Carter*	3 00
Improved Slide Rule, *Hogg*	3 50
Introduction to Study of Textile Design, *Barker*	2 50
Jacquard Weaving and Designing, *Bell*	4 00
Manual of Weave Construction, *Kastanek*	1 00
Silk Throwing and Waste Silk Spinning, *Rayner*	2 50
Simplex Tables	50
Spinning and Twisting of Long Vegetable Fibres, *Carter*	5 00
Story of Textiles, *Walton*	3 25
Technical Testing of Yarns and Fabrics, *Herzfeld*	3 50
Textile Design, *Woodhouse and Milne*	3 25
Textile Design, *Umpleby*	3 00
Textile Design and Color, *Watson*	2 50
Textile Fibres, *Matthews*	4 00
Textile Soaps and Oils, *Hurst*	2 50
Textiles, *Barker*	2 00
Warp Preparation and Weaving, *Nelson*	3 00
Waterproofing of Fabrics, *Mierzinski*	2 50
Weaving, Plain and Fancy, *Nelson*	1 25

Cotton Manufacture

Carding and Spinning, *Ivey*	$1 00
Chemistry of Tape Sizing, *Cooper*	1 50
Cotton Carding, *Lindsay*	50
Cotton Cloth Designing, *Holmes*	2 00
Cotton Combing Machines, *Thornley*	3 00
Cotton Manual, *Broadbent*	75
Cotton Mill Commercial Features, *Tompkins*	5 00
Cotton Mill Machinery and Calculations, *Parker*	1 50
Cotton Spinning, *Hedrick*	3 00
Cotton Spinning (3 vols.), *Taggart*	7 50
Cotton Spinning, (3 vols.), *Thornley*	6 50
Cotton Waste, *Thornley*	3 00
Humidity in Cotton Spinning, *Dobson*	1 50
Loomfixing and Weaving, *Ivey*	1 25
Mule Spinning, *Thornley*	3 00
Plain Series of Cotton Spinning Calculations, *Cook*	1 00
Practical Cotton Calculations, *Whitworth*	1 00
Self-Acting Mules, *Thornley*	3 00
Structure of the Cotton Fibre, *Bowman*	3 00
Students' Cotton Spinning, *Nasmith*	3 00

Woolen and Worsted Manufacture

Cone Drawing, *Buckley*	$ 50
Faults in the Manufacture of Woolen Goods and their Prevention, *Reiser*	2 50
Finishing of Textile Fabrics, *Beaumont*	4 00
How to Make a Woolen Mill Pay, *Mackie*	2 00
Manual of Cloth Finishing	6 50
Practice in Finishing Woolens and Worsteds, *Greene*	50
Principles of Wool Combing, *Priestman*	1 50
Principles of Woolen Spinning, *Priestman*	2 50
Principles of Worsted Spinning, *Priestman*	2 50
Structure of the Wool Fibre, *Bowman*	3 00
Wool Carding and Combing, *Barker and Priestly*	1 50
Woolen and Worsted Loomfixing, *Ainley*	1 00
Woolen and Worsted Finishing, *Timmerman*	3 00
Worsted Overlooker's Handbook, *Buckley*	50
Worsted Preparing and Spinning, *Bradbury and Buckley*	1 50

Bleaching, Dyeing, Printing, Finishing, Etc.

Aniline Black, *Noelting and Lehne*	$5 00
Bleaching and Dyeing of Vegetable Fibrous Materials, *Hubner*	5 00
Bleaching of Linen and Cotton Yarn and Fabrics, *Tailfer*	5 00
Chemistry and Practice of Finishing (2 vols.), *Bean and McCleary*	15 00
Chemistry and Practice of Sizing, *Bean and Scarisbrick*	10 00
Color Printing of Carpet Yarns, *Paterson*	3 50
Dressings and Finishings for Textile Fabrics and Their Application, *Pollyn*	3 00
Dyeing of Textile Fabrics, *Hummel*	1 75
Labratory Manual of Dyeing and Textile Chemistry, *Matthews*	3 50
Manual of Dyeing (2 vols.), *Knecht, Rawson and Loewenthal*	12 00
Mercerization (2 vols.)	7 50
Methods of Textile Chemistry, *Dannerth*	2 00
Practical Cotton Finishing	1 25
Principles and Practice of Textile Printing, *Knecht and Fothergill*	10 50
Principles of Bleaching and Finishing of Cotton, *Trotman and Thorp*	5 00
Printing of Textile Fabrics, *Rothwell*	6 00
Science of Color Mixing, *Paterson*	3 00
Silk Dyeing, Printing and Finishing, *Hurst*	2 00
Textile Chemistry and Dyeing, *Ginty*	3 00
Textile Fabrics and Their Preparation for Dyeing, *Hasluck*	1 00

Any of the above sent postage or express prepaid on receipt of price. Subscribers to the TEXTILE WORLD RECORD may buy books from us with the understanding that if not satisfactory, they may be returned within five days (postage or express paid) if in good order, and money will be refunded.

Lord & Nagle Co., Boston, Mass.

MILL NEWS

Montana, Great Falls. A company has been organized under the style of the Montana Flax Fibre Company and contemplates establishing several flax tow mills to utilize flax straw which is now burned. The first of these mills is being built at Conrad and will be completed about January 1, at a cost of about $30,000, according to report, and will use a new process. The inventor of the process is at present in England with samples of flax tow that have been produced from Montana grown flax.

*New Hampshire, Keene. The webbing factory being built here will operate under the style of the Keene Artistic Narrow Web Company and will be a branch of the New Hampshire Artistic Web Company of Barnstead, N. H. Manufacturing will begin next month. The class of goods manufactured at Barnstead will be made in the new plant and operations will start with 50 looms.

New Hampshire, Suncook. The business of the Suncook Artistic Webbing Company has been incorporated under the same name with capital stock of $10,000 and it is proposed to enlarge the plant. The present plant contains 11 looms weaving narrow silks, insertions, wash trimmings and edgings and was established about a year ago by Emil Zinn, formerly of the Barmen Webbing Co., at Gossville, N. H. J. S. Dearborn is president; George F. Georgi, treasurer; and Emil Zinn, manager and buyer.

New Jersey, Camden. Philadelphia contractors are estimating on plans and specifications for a new power house, 40 by 60 feet, to be erected at 3rd and Everitt Sts. for Eavenson & Levering, scourers and carbonizers of wool.

New Jersey, Montville. A Mr. Booth, formerly an overseer for John Capstick & Sons, has taken over a building of the Capstick plant which was not destroyed in the fire several months ago and is operating under the name of the Montville Finishing Company. A new brick building, 125 by 50 feet, 1 story high, is being erected as an addition to the plant. As noted in a previous report, John Capstick & Sons expect to rebuild next year.

New Jersey, Passaic. M. Desaye & Co., dyers, bleachers and finishers of tapestries, laces and piece goods, are building a one-story addition, 50 by 50 feet.

New Jersey, Paterson. John J. Holder and Edward J. Schellenberg have organized a new corporation under the style of the American Ribbon Finishing Company with authorized capital stock of $100,000 to take over the business heretofore conducted under the name of Schellenberg & Holder. Fifteen thousand dollars have been paid in. The business will be moved from the Lakeview Mill to the Ball Mill and additions made to the equipment.

New York, Glenham. A new bleachery has been equipped by the Glenham Embroidery Company to finish its goods and to do some commission work for outside parties. It is to be operated under the name of the Beacon Bleachery and will handle embroidered goods exclusively. A large part of the equipment, which includes singeing, finishing and mercerizing machinery, has been imported from Germany. The construction of the plant of the Beacon Bleachery is arranged so that the capacity may be doubled and this increase will be made as soon as there is a bigger demand for the class of work turned out. The machines are driven by individual electric motors. A dam 45 feet high has been built across the Fishkill Creek by the Glenham Embroidery Company and furnishes 1500 h. p., part of which is used in the new bleachery. Mr. Brann is in charge of the bleaching department and Mr. Westermann supervises work in the finishing department.

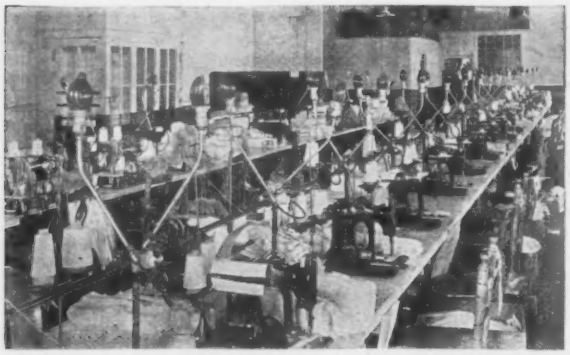
*New York, Little Falls. In August it was reported that James E. Dingman and Robert L. Babcock had formed a partnership to manufacture mattresses and carpet linings in a plant to be equipped on Loomis Island. The new concern has been incorporated under the name of the Textiles By-Products Corp., with authorized capital stock of $20,000 by Messrs. Dingman and Babcock and Robert F. Livingstone, of Little Falls. Mr. Dingman is president and manager of the Dingman Company which operates a plant on cotton and jute bats, mattress felts, etc., on Mohawk St., with an annex on Mill St.

North Carolina, Henderson. An addition, 30 by 60 feet, of brick construction, will be built to the plant of the Carolina Bagging Co., and the construction contract has been awarded to W. H. Fogleman of Henderson. This concern manufactures jute bagging for covering cotton and has four pickers, 17 cards, 400 spindles and 12 broad looms.

Pennsylvania, Marcus Hook. Ballinger & Perrot have completed drawings and specifications and invited bids for three additional buildings to the plant of the American Viscose Company, which will increase the present capacity between 50 and 60 per cent. One of the new buildings will be 135 by 423 feet, 2 stories high with basement, brick walls and saw tooth roof. The second building will be 78 by 152 feet, 5 stories high, brick walls, with floors and roof of reinforced concrete. The third building will be 1 story and basement, 117 by 173 feet. At the present time over 215 houses for operatives, a dining room building and a dispensary building are being built. The American Viscose Company manufactures artificial silk and has a New York office at 445 Broome St. C. A. Ernst is manager of the plant and buyer.

Pennsylvania, Philadelphia. Local architects are preparing plans and specifications for a new mill building and power plant to be erected on Main St., Manayunk, for A. T. Baker & Co., who are now located at Main and Carson Sts., where they are operating 42 looms on corduroys, velvets and plushes. The new building will be four stories high, 70 by 200 feet, and will be constructed of reinforced concrete, with metal sashes.

Rhode Island, Central Falls. New yarn winders are to be added to the equipment of Richardson, Foster & Co., dyers, bleachers and finishers of yarns, tops and piece goods. The plant is being operated overtime until nine o'clock five nights a week.



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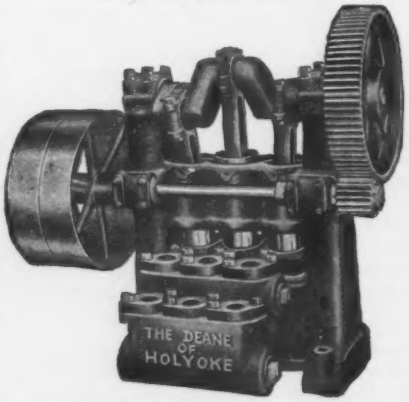

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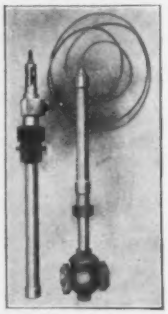

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WRITE FOR CIRCULARS

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MILL NEWS.

Robert Sargeant has accepted the position of overseer of carding at the Barre Wool Combing Co., South Barre, Mass. He was formerly employed at the Bigelow Carpet Co., Clinton, Mass.

Hugh Gallagher has accepted the position of overseer of the cloth department at the Appleton Mill, Lowell, Mass. He was formerly employed at the Harmony Mills Co., Cohoes, N. Y.

George E. Widdoes has again entered the employ of the Ounegan Mill, American Woolen Co., Old Town, Me., as overseer of finishing.

C. C. Brown will take charge of the slashing, warping and spooling departments at the new Dan River Mill, Schoolfield, Va., on completion of the plant. He was formerly employed at the Oneida Mill, Graham, N. C.

T. M. McNeill has been promoted to the position of superintendent of the Ottaray Mill, Union, S. C.

J. J. Hyder has accepted the position of overseer of weaving at the Avondale Mills, Birmingham, Ala. He was formerly employed at the Exposition Mills, Atlanta, Ga.

W. P. Wallace has been elected president of the reorganized Social Circle Cotton Mills, Social Circle, Ga. He comes from Rutledge, Ga.

J. T. Phillips has acepted the position of overseer of dyeing at the Victor Mills, Greer, S. C. He comes from Burlington, N. C.

J. D. Beacham, formerly assistant superintendent of the Chiquola Mill, Honea Path, S. C., has been promoted to the position of superintendent.

J. B. Foster has accepted the position of overseer of beaming at the Oneida Mill, Graham, N. C. He was formerly employed at the Elmira Mills, Burlington, N. C.

Rudolph Kleinjung, secretary and general manager of the New Jersey Worsted Spinning Co., Garfield, N. J., died at his home in Ridgewood, N. J., after a short illness at the age of 54 years.

Max Froelicher Stehli, for forty years head of the silk firm of Stehli & Co., Zurich, Germany and New York City, died suddenly November 24, of heart disease, at Zurich.

M. Middy, for the past three years overseer of knitting at the Stuart-Hance Underwear Co., Piqua, O., has severed his connection with that company.

Frank Rogers has been promoted to the position of superintendent of the Rathbun Knitting Co., Woonsocket, R. I. He formerly held the position of overseer of carding at this mill.

D. M. Mullen, superintendent of the Parker Hosiery Mill & Dye Works, Frostburg, Md., has resigned his position.

J. A. Jubb has accepted the position of overseer of finishing at the Phoenix Woolen Co., Stafford, Conn. He was formerly employed at the Black River Woolen Co., Ludlow, Vt.

William H. Kingsley, overseer of weaving at the Shetucket Co., Norwich, Conn., has resigned.

William H. Kohler, formerly superintendent of George S. Colton Elastic Web Co., Easthampton, Mass., has accepted the position of designer at the Glendale Elastic Fabrics Co., in the same town.

Henry A. Cole has been appointed superintendent of the Granite State Mill, Fairbanks & Dorr, Guild, N. H. Mr. Cole was formerly boss finisher at this mill.

*New Jersey, Belvidere. John E. Allen expects to begin manufacturing in his new plant about the first of January, making misses' ribbed and ladies' hosiery. The number of machines has not been determined as yet. As noted in previous reports Mr. Allen was for many years connected with the Bamford Bros. Silk Mfg. Co., and is building a new hosiery mill on a site adjoining the Pennsylvania R. R. freight station.

*New Jersey, Boonton. Ground has been broken for the plant to be occupied by the new Boonton Hosiery Company. The building will be of brick, 68 by 98 feet, 4 stories high, with separate boiler and engine house. As noted in previous reports this new concern was organized by George E. Fichtner who has been elected president, treasurer and buyer, and will begin manufacturing with 18 or 24 full fashioned machines making silk hosiery.

New Jersey, Bridgeton. A 3-story brick and steel building, 80 by 36 feet, with separate boiler room, is to be built in Bridgeton for E. Sutro & Son Company, of Philadelphia, manufacturers of hosiery, who will take a five-year lease of the property. For some time E. Sutro & Son Company has operated a small branch finishing plant in the basement of the Commercial League Bldg.

*North Carolina, Connellys Springs. A charter has been secured for the Connellys Springs Knitting Mills Company with authorized capital stock of $100.000, of which about $12,000 has been subscribed. As noted in previous reports, D. B. Mull recently purchased the hosiery department of the Ethel Cotton Mills of Selma, N. C., and moved this machinery to Connellys Springs.

*North Carolina, Thomasville. Fifty knitting machines will be in operation in the Sellers' Hosiery Mills, No. 2, by the end of the year and later on an increase will be made to 75 machines or more. This is a branch of the Sellers' Hosiery Mills of Burlington and manufactures 200-needle men's half hose. D. E. Sellers of Burlington is manager and buyer.

Pennsylvania, Hatfield. The Hatfield Hosiery Mills have been started up by Chester Knipe with Russell Knipe as manager and John Bossert, superintendent. The plant contains 50 knitters, 2 ribbers, 2 sewing machines and 6 loopers, which they are operating on ladies' and men's split foot and silk and cotton hosiery which they sell through J. Stuart Birkhead, Philadelphia.

*Pennsylvania, Mifflintown. Six knitting machines have been installed and 14 more machines have been ordered by Max W. and K. O. Nestler, who it was reported in August would locate a silk hosiery knitting mill on Fourth St. Messrs. Nestler will manufacture under the name of the Juniata Hosiery Mills, making lines of ladies' silk hosiery. A gas engine supplies the power.

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MILL NEWS.

*Pennsylvania, Philadelphia. C. C. Silverwood, who was reported several months ago to be interested in establishing a plant for the manufacture of seamless hosiery, began manufacturing during October under the name of the Advance Hosiery Mills, at 2427 North Mascher St., with 25 knitting machines.

Pennsylvania, Philadelphia. The Wyoming Knitting Mills, with Elias Aden as manager, have been started up at 4325-27 N. Howard St., where 4 flat knitters and 3 sewing machines have been installed. Cardigan jackets, ladies' vests and sweater coats are manufactured. The production is sold direct.

*Pennsylvania, Philadelphia. The Advance Hosiery Mills, recently reported by us as having been started by Edward Dean at 2427 Mascher St., are being operated on women's seamless hosiery, 200 and 220-needle goods, using cotton and mercerized yarns. The plant contains 40 knitting machines, 6 loopers and 4 sewing machines. The production is sold through New York.

Pennsylvania, Philadelphia. The Brooks Hosiery Mills have recently been started up by H. E. Brooks at the S. E. corner of Howard and Norris Sts., with 30 knitters, 2 loopers and 1 sewing machine, on a line of ladies' seamless silk, cotton and mercerized hosiery, 220-needle goods. New machines have been ordered and will be installed within a short time for the manufacture of silk plaited goods. The production is sold direct.

*Pennsylvania, Royersford. Plans are being completed for the new mill to be built here for the Progressive Knitting Mills of Spring City. The location is at the corner of Main St. and Railroad Ave., where land was recently purchased. The building will be 138 by 50 feet, 4 stories high, and will give a large increase over the present facilities at Spring City. The main office is at 122 No. Third St., Philadelphia.

Pennsylvania, Sunbury. H. A. Boyer and G. E. Trout of Reading have taken an option on the old flour mill at the corner of Awl and Walnut Sts. and expect to remodel this building and equip it to manufacture hosiery. The mill is a brick structure well adapted to the hosiery manufacturing business. It is said that employment will be given to about 100 hands.

*Pennsylvania, Tower City. S. D. Bausher, president, and J. B. Lesher, treasurer of the Unrivaled Hosiery Mill, Inc., at Williamstown have completed the organization of the Bestock Underwear Company and the contract for the new mill to be built at Tower City has been awarded to Dietrich & Son, Pottsville. The building is to be of brick, 50 by 100 feet, 2 stories high, and will be used to manufacture only a high grade of women's underwear. The new corporation has capital stock of $50,000. Solon D. Bausher, proprietor of the Gotham Underwear Mill at Hamburg, and president of the Unrivaled Hosiery Mill, Inc., at Williamstown; John B. Lesher, treasurer of the Unrivaled Hosiery Mill, Inc., of Williamstown, and George E. Zook, formerly of Hagerstown, Md., who recently removed to Hamburg, are the incorporators.

*Pennsylvania, Warren. Application has been made for a charter for the Warren Silk Mfg. Company with capital stock of $60,000 and the new concern will organize before January and equip the mill that is being built for the business by the citizens of Warren. Jacob Thissen will be president, manager and buyer, and P. W. Durkin will be treasurer. The equipment will include ten knitting looms for making silk fabric and equipment for cutting up this fabric and manufacturing silk gloves, silk hosiery and other products. There will also be a dyeing department and electric power equipment. This business will be similar to the business of the Thissen Silk Mfg. Company at Kane, Pa., which was organized by Jacob Thissen.

*Pennsylvania, York Haven. I. E. Warner has practically completed the work of remodeling a building and equipping it to manufacture hosiery and will begin the production of goods this month under the name of the Penn Hosiery Mill. Seamless half hose will be manufactured on 20 knitting machines operated by electric power. The product will be sold through H. S. Meyer & Co., New York.

South Carolina, Columbia. A plant for knitting fine hosiery is to be established by J. M. Graham & Son, 612 Laurel St. J. M. Graham has been manager of the Columbia Hosiery Mills of G. H. Tilton & Sons, of Tilton, N. H., and for several years has held a contract for convict labor, which is about to expire.

*South Carolina, Union. A charter has been received by the Gault Mfg. Co., a new concern which it has been noted will establish a plant in Union for manufacturing men's and women's hosiery, dyeing and finishing the product. The capital stock is $10,000. J. H. Gault, formerly treasurer and manager of the Excelsior Knitting Mills, Union, is president, treasurer and manager of the new concern. Plans have been made for two frame buildings, 170 by 40 feet, and 32 by 32 feet.

*Wisconsin, Brillion. The branch to be established in Brillion by the Wisconsin Knitting Mills of Manitowoc will be in rented quarters and will be used for finishing only. Thirty to fifty girls will be employed. No definite plans have been made for building the projected addition to the main plant in Manitowoc owing to the difficulty in securing sufficient help.

*Georgia, Lafayette. One hundred and fifteen knitting machines have been installed in the addition to the Walker County Hosiery Mills, built during the fall, and gives total equipment of 360 knitting machines and 8 sewing machines making men's and women's seamless hosiery. A. R. Fortune, treasurer and buyer of this concern, is interested in organizing the new Fortune Hosiery Mills which will begin operations about January 15, as noted in another part of this issue.

Georgia, Savannah. As noted in another part of this issue the machinery formerly used in the Columbia (S. C.) Hosiery Mills has been moved to the Savannah plant of G. H. Tilton & Sons. In the coming year a still further increase will be made in the Savannah plant. The main office of G. H. Tilton & Sons is at Tilton, N. H.

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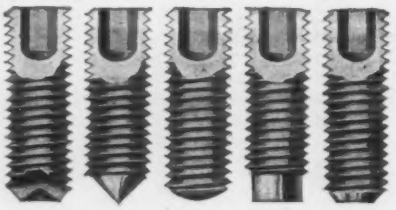

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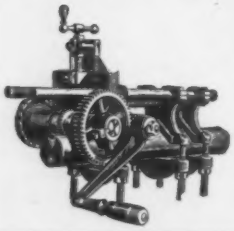

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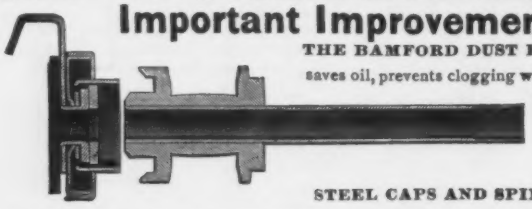

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MILL NEWS

*Canada, Ontario, Delhi. Within a month the new plant of the Sovereen Mitt, Glove & Robe Company, to take the place of the old plant destroyed by fire last April, located on the old site, will be completed. The new plant is double the size of the old one. Within thirty days after the fire they were running in temporary quarters. The new mill is 100 by 33 feet, 3 stories high.

Canada, Ontario, St. Catherin's. Warren Bros., manufacturers of sweater coats and sporting knit goods, have increased their equipment and now have 23 knitting machines and 17 sewing machines, giving employment to 75 hands.

Canada, Ontario, Appleton. A number of hosiery knitting machines are being installed in the plant of Caldwell, Boyd & Co., Ltd., manufacturers of woolen goods and woolen yarns. This new department will manufacture heavy wool hose.

Massachusetts, Boston. An increase has been made in the capital stock of the Hub Hosiery Mills, 11 Waterford St., from $10,000 to $50,000, and 40 knitting machines are to be added to the equipment. Some of this new machinery is now coming in. Infants' cashmere and mercerized hosiery, silk heel and toe, is manufactured.

Massachusetts, Reading. The Middlesex Knitting Co., Inc., of Wakefield, has secured larger quarters in Black's Block, Reading, and will move here between November 26 and December 1. The new quarters give about twice the floor space occupied in Wakefield and provide for a gradual increase which will be made as the business warrants. Two or three additional machines are to be installed at once. The Middlesex Knitting Co., Inc., is a new concern established about a year ago and manufactures high grade sweater coats. A. H. Fairbanks is treasurer and buyer and W. A. Hendrickson is superintendent.

*Michigan, Grand Rapids. It is understood the Grand Rapids Underwear Co. is preparing to go forward with the construction of the projected new factory building to be erected on Garden St., where a site was purchased as noted in August. A permit has been received to build a factory 50 by 125 feet, 2 stories high, of brick mill construction. This will supply needed space for expansion of the manufacturing facilities. Full fashioned underwear is manufactured on 30 sections of full fashioned frames and 30 sewing machines. E. A. Clements, president of the Globe Knitting Works, and the Grand Rapids Hosiery Co., both of Grand Rapids, is president, and C. N. Mather is treasurer and buyer.

*New York, Brooklyn. The new mill which has been under construction for Julius Kayser & Co., is finished and some of the equipment has been ordered, but not all that will be required. The addition is 50 by 270 feet, 7 stories and basement, and all but one floor will be equipped with silk hosiery machinery.

New York, Glendale. Simon Ascher & Co., 390 4th Ave., N. Y. City, have moved their Brooklyn plant to the Bishops Securities, Inc., Loft Bldg., Dry Harbor Road, Glendale. One hundred knitting machines and 25 sewing machines will be operated in Glendale on fancy knit goods.

*North Carolina, High Point. The recently reported increase in the High Point plant of the Durham Hosiery Mills will give equipment of 465 knitting machines. This plant is operated on 176-needle half hose. The increase will be completed about January 1.

*North Carolina, Wendell. It is reported the Wendell Knitting Mills Company is to increase the capital stock from $20,000 to $40,000 in January and install 50 additional knitting machines. This is a new concern organized less than a year ago which built a mill during the summer and installed 50 knitting machines for making seamless hosiery. R. B. Whitley, owner of the Whitley Mfg. Company here, is president.

Ohio, Elyria. A further increase is to be made in the equipment and production of the Fay Stocking Company before April 1, 1914. Nearly a year ago the capital stock was increased from $75,000 to $175,000 for the purpose of extending the business, as noted previously, and shortly afterwards a small increase in the facilities was made. Men's, women's, misses' and children's hosiery are manufactured. Henry Wurst is president and manager.

Pennsylvania, Grill. The Grill Hosiery Mills have recently installed an equipment for dyeing their production and also added 20 new knitting machines.

*Pennsylvania, Harrisburg. Before the end of the month the Moorhead Knitting Company will move into the new factory which has been under construction for the past several months at Cameron and Walnut Sts. The new building is 4 stories high, 50 by 140 feet, of reinforced concrete and brick construction with reinforced concrete floors. It gives a large increase in manufacturing facilities. It also provides a recreation room and restaurant for operatives. This concern manufactures men's and women's silk and cotton hosiery.

Pennsylvania, Philadelphia. Louis Bry & Co., located in the Hohlfeld Building, 10th and Allegheny Ave., has been succeeded by the Keystone Knitted Fabric Co., a company recently incorporated under the laws of New York by J. Bry & Co., 3 W. 22nd St., New York City. With James Armitage as manager, they are manufacturing a line of boucle cloths, astrachans, etc., having recently installed an equipment for spinning their own worsted yarns (Bradford system) and also enlarged their equipment of knitting machines. The production is sold direct through the main office of the company as given above. They are buying, in addition to cotton yarns, both raw wool and tops.

Pennsylvania, Philadelphia. Rosenau & Loeb, operating the Liberty Hosiery Mills, at 1822 Cadwallader St., on men's, women's, children's and infants' hosiery, with a branch plant at Hellertown, Pa., have increased the equipment in their main mill to 380 knitters and are arranging for the starting up of another branch in Frankford, in which they will install a number of knitters for the manufacture of the same line of goods.

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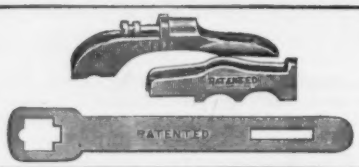

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MILL NEWS

*Connecticut, Norwich. The Reliance Worsted Company has decided to dismantle its mill, sell off the machinery and go out of business. According to Phillip Henault, treasurer and agent of the concern, this step is being taken because the water of the Shetucket River is unfit for their use and the cost of city water is exorbitant. The plant is closed and some of the looms have been shipped to other mills. The mill building was leased from the N. Y., N. H. & H. R. R.

Pennsylvania, Philadelphia. E. Biswanger & Sons Co., operating 30 looms on ingrain carpets, have shut down their mills at Wishart and Emerald Sts. and are arranging for the disposal of their equipment with a view of retiring from business.

*Georgia, Lafayette. A plant of 60 knitting machines will be equipped in the course of the next few weeks by the Fortune Hosiery Mills, recently organized by P. D. Fortune of the Lafayette and Union Cotton Mills, A. R. Fortune of the Walker County Hosiery Mills of Lafayette, and J. C. Miller of Chattanooga.

Illinois, Chicago. Leo Oboler, 3039 No. California Ave., plans to establish a small shop for manufacturing sweaters in the near future.

*Indiana, Fort Wayne. Machinery equipment is being installed at Columbia and Harrison Sts. by the new Anthony Hosiery Mills. Lines of ladies' hosiery in lisle and mercerized are to be the product, and the initial equipment will consist of 30 knitting machines, 2 sewing machines, winding machinery and electric power equipment. This concern has capital stock of $15,000. Morris Levy is president; Abe Levy, treasurer; and H. M. Kahn, superintendent and buyer.

Kentucky, Nicholasville. J. T. Duncan, president of the Douglasville Knitting Mills at Douglasville, Ga., and E. McD. Baechtel, formerly superintendent of the Blue Ridge Knitting Company at Hagerstown, Md., are organizing a $30,000 company to establish a hosiery knitting mill in Nicholasville.

Kentucky, Paducah. The Paducah Hosiery Mills, with a capital of $12,000, R. E. Hearne, president; H. M. Childress, secretary and treasurer, and E. O. Davis, manager and superintendent, are equipping a plant for the manufacture of misses' ribbed hosiery. The equipment for the present will consist of 30 ribbers and 20 knitters. The production to be sold direct in the grey. Mr. Davis, the manager of the plant, will no doubt be remembered by the knitting trade as the inventor of the "Davis" looper, a large number of which have been installed in various mills throughout the country.

Pennsylvania, Philadelphia. Portner Bros. & Son, who are operating a plant at 257 Market St., with 20 knitters on silk neckties and mufflers, have in contemplation the installation of a line of machinery some time during the coming year on which they will make a line of sweater coats.

Pennsylvania, Philadelphia. H. A. Staunton & Co., operating the Calypso Hosiery Mills at 214 W. Dauphin St., are removing the plant to larger quarters in the Davenport Mills at Hancock and Somerset Sts. The equipment of the plant has been increased to 100 ribbers, 75 latch needle knitters, and 8 loopers, on which they are turning out women's and children's cotton ribbed hosiery, which they sell direct.

Pennsylvania, Pittston. A plot of ground adjoining the plant of the Alpine Knitting Company has been secured on which a steam and electric power plant is to be erected. The old boiler house is to be converted into a shipping room. Earlier in the year a one-story addition, 70 by 58 ft., was constructed and equipped as a bleachery and additions were made in the manufacturing departments, largely increasing the output.

Pennsylvania, Reamstown. Work has been started on the foundation for a new 3-story brick mill, 28 by 78 feet, for the Hope Hosiery Company and on its completion, about December 1, the equipment operated in the present branch plant at Reamstown will be moved into it and about 35 new knitting machines added. Men's half hose is manufactured on present equipment of 40 latch needle knitting machines. Electric power will be used. C. S. Ansel is superintendent of the local plant. Homer L. Stork, located at the main plant at Adamstown, Pa., is manager and buyer.

*Tennessee, Athens. By the first of February, additions to the manufacturing facilities of the Athens Hosiery Mills, R. J. Fisher, proprietor, will have been completed, which will make the production about 1,500 dozens per day. The branch plant at Riceville will have 30 knitting machines, 30 ribbers and 8 loopers, and the goods will be shipped to Athens to be dyed and finished. In the addition to the Athens plant there will be installed 40 ribbers, 40 additional footers and 2 additional loopers.

Tennessee, Lenoir City. A 1-story addition, 100 by 40 feet, of brick construction, will be built by the Holston Mfg. Co. for a bleach house. Women's and children's cotton hosiery and cotton yarns are manufactured.

*Vermont, Bennington. The new Bennington Hosiery Company has purchased the mill formerly operated by Tiffany Bros. The quarters in which the new hosiery concern started were inadequate, but the newly acquired plant is large enough to more than meet their present demands and to allow for expansion. Tiffany Bros., who manufactured men's underwear, retired from business several weeks ago and shut down the plant. Henry L. Field is vice-president, manager and buyer of the Bennington Hosiery Company.

Washington, Spokane. C. T. Symmes and Joseph Thiebes, proprietors of the Spokane Knitting Mills, 1107 Railroad Ave., will install new German knitting machines and double the capacity of the plant. Sweater coats are manufactured. Messrs. Symmes and Thiebes are also the proprietors of the Pacific Hide & Fur Company at the same address.

West Virginia, Martinsburg. A large 4-story building will be erected by the Interwoven Mills, Inc., at a cost of $35,000, to be used for storage and packing purposes.

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MILL NEWS

California, San Diego. F. H. King, of Los Angeles, said to be representing Merry & Elliott of that city, has been here looking over conditions with a view of organizing a company to build a cotton mill in San Diego.

Canada, Quebec, Three Rivers. In a circular announcing a new bond issue of the Wabasso Cotton Co., Ltd., it is stated that when the present plans of this company and the affiliated interests are carried to completion the group of mills will include a printing and dyeing plant and also a new 2,000-loom cotton mill. The St. Maurice Valley Cotton Mills of Three Rivers, the Shawinigan Cotton Co., Ltd., and the Shawinigan Knitting Co., Ltd., of Shawinigan Falls, and the Oxford Knitting Co., Ltd., of Woodstock, Ont., are in this group.

Connecticut, Derby. Creditors of the Derby Fur Fabric Mfg. Company have formed a new corporation under the style of the Defurbrik Co., Inc., with authorized capital stock of $150,000, to continue the business until the claims are paid in full. The officers are Andrew Foulds, New York, president; William S. Nye, of Providence, vice-president; Charles E. Lester, New York, secretary; C. N. Gerhold, Passaic, treasurer, and Frederick Halterman, Passaic, general manager. Most of these men were members of the creditors' committee.

Connecticut, Plainfield. New York representatives of French silk and lace manufacturers have been here looking over a power privilege on the Quinebaug River. It is rumored that a large mill is to be erected somewhere in New England. Jules Flammaron, of Marseilles, France, is interested.

Connecticut, Shelton. One hundred and fifty weavers employed by Sidney Blumenthal & Co., Inc., have gone out on strike as a result of the readjustment of working conditions whereby the weavers claim they cannot make as high wages as formerly.

Connecticut, Somerville. An automatic truck has been purchased by the Somersville Mfg. Company to replace horse-drawn trucks.

Connecticut, Vernon. The Fitch-Belding Company has been incorporated with capital stock of $100,000 and is authorized to manufacture and deal in silk goods. The incorporators are M. M. Belding, Jr., of Belding Bros. & Company, Rockville, Conn., Edwin A. Fitch, Harry A. Fitch and William O. Fitch.

*Connecticut, Waterford. The cotton mill project headed by Arthur H. Gulliver of Norwich has been dropped for the present but may be taken up again next spring.

Connecticut, Yantic. It is understood that the Yantic Woolen Company, now in bankruptcy, is to be reorganized. The reports that were current some time ago to the effect that Angus Park, of Hanover, Conn., had leased the plant proved to be without foundation.

MILL NEWS.

*New York, Kingston. Plans for the factory buildings for the new Art Silk Yarn Company have been submitted to local contractors for bids. Detailed reports of this project have been given previously. A charter was secured last January with authorized capital stock of $500,000 to manufacture artificial silk under a new process. What is known as the Diehl property on Albany Ave., Kingston, was secured and Frederick W. Fischer, 32 Union Sq., New York, was commissioned to prepare plans for a plant. The office of the concern is with Frederick Vietor & Achelis, 38 E. 25th St., N. Y. City. Bernard W. Wilkins is president and manager; Charles A. Herrmann, treasurer; C. A. Greiner, vice-president and superintendent. F. W. Korth, 726 Spruce St., Philadelphia, is also connected with the company.

Rhode Island, Cranston. Additions and improvements are to be made by the Narragansett Finishing Co., and while details have not been announced they state that they are practically doubling the output by an enlargement from the boiler plant down. They are dyers and finishers of cotton linings, etc. C. J. Obermayer is president, and T. P. Hines is treasurer.

*Rhode Island, Crompton. The new 4-story building being erected by the Crompton Company is to balance the plant so as to avoid night work in the finishing works. They have needed this addition for several years. The new building will be 133 by 60 feet.

Rhode Island, Pawtucket. New braiding machinery and some other equipment is soon to be installed in the plant of the Rhode Island Textile Co., rear of 47 East Ave., bringing the total equipment up to 250 braiders with complementary machinery. This is a new concern organized a few months ago which manufactures cotton and silk braids, operating by electric power. The capital stock is $10.000. Arthur L. Kelley, Jr., is president; George F. Kelley, treasurer; John H. Conrad, secretary, general manager and buyer.

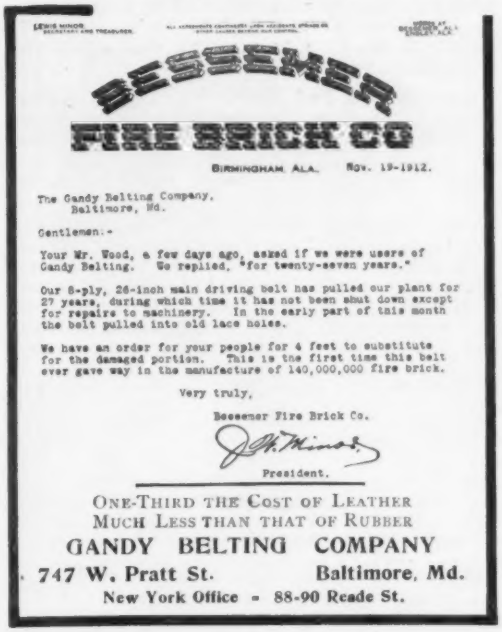
*Wisconsin, Baraboo. The Baraboo Towel Mills, Geo. McArthur & Sons, proprietors, have enlisted the aid of the Baraboo Commercial Organization in securing $6,600 for the erection of a new plant. The new building will be 80 by 40 feet, of modern concrete construction and will provide space for an increase over the present equipment of 18 broad and 68 narrow looms, with auxiliary machinery. Turkish towels and crashes are manufactured.

Connecticut, Stafford Springs. A storehouse owned by the Fabyan Woolen Company has been destroyed by fire with loss on the building and contents estimated at $2,000. It will not be rebuilt.

Massachusetts, Fall River. A small loss, chiefly caused by water, was suffered by the Arkwright Mills as a result of a fire in the picker room.

Massachusetts, Newburyport. A building used as a waste house and picker room by the American Textilose Company has been destroyed by fire with loss of about $10,000; fully covered by insurance.

Gandy Belting Used Constantly For Twenty-Seven Years



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Your Mr. Wood, a few days ago, asked if we were users of Gandy Belting. We replied, "for twenty-seven years."

Our 8-ply, 26-inch main driving belt has pulled our plant for 27 years, during which time it has not been shut down except for repairs to machinery. In the early part of this month the belt pulled into old lace holes.

We have an order for your people for 4 feet to substitute for the damaged portion. This is the first time this belt ever gave way in the manufacture of 140,000,000 fire brick.

Very truly,

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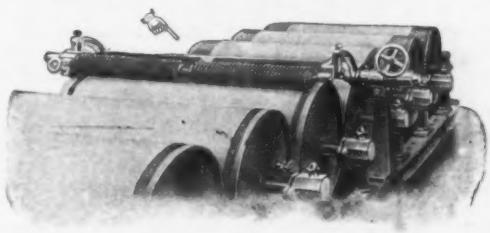

Because it stretches the goods where they are beginning to set

SAVES
Time—Labor—Money

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141 Milk Street, Boston

MILL NEWS

*Massachusetts, Fall River. At the meeting of stockholders of the Luther Mfg. Company it was voted to authorize an increase of 50 per cent. in the capital stock, from $350,000 to $525,000, the increase to be by a 50 per cent. stock dividend. The officers were re-elected.

Massachusetts, Fall River. The Crystal Spring Dyeing & Bleaching Company has plenty of work on hand to warrant running the plant overtime and it is said that if sufficient help could be secured a night and day schedule would be put in force.

Massachusetts, Lawrence. The Monomac Spinning Company has been incorporated with capital stock of $1,000,000 to take over the Monomac Spinning Company of South Lawrence which has been operated since the construction of the plant two or three years ago as a department of William Whitman & Company. The incorporators are William Whitman, Arthur T. Bradlee and Louis H. Fitch.

Massachusetts, Methuen. The Merrimack Valley Mills is the name of the new corporation which will operate the Tremont Worsted Mills. A charter has been secured under this title with capital stock of $15,000, divided into 150 common shares, of which 74 shares are held by Gusten Nordenstierna, president; Edwin J. Hylan, treasurer and clerk, 74 shares; Ivar L. Sjostron, North Andover, one share, and Eugene S. Hylan, Lowell, one share.

*Masachusetts, New Bedford. Owners of the common stock of the Dartmouth Mfg. Corp. have received an announcement of a cash dividend of 33 1/3 per cent. The stockholders have been notified that this dividend may be applied toward the purchase of the new issue recently voted.

Massachusetts, New Bedford. The explosion of a fly wheel in the engine room of the mill on North St., known as departments 9 and 10 of the New England Cotton Yarn Company, caused considerable damage. The mill is being run by an auxiliary engine.

Massachusetts, New Bedford. Reports that the Holmes Mfg. Company will enlarge are denied by Charles L. Harding, president of the concern.

Massachusetts, New Bedford. Three New Bedford mills increased their dividends last week, the Neild Mfg. Co., from four per cent. to five per cent.; the Holmes Mfg. Co., from four per cent. to six per cent.; and the Quissett Mills inaugurated dividends at the rate of six per cent. These are all new mills built in the boom of three years ago. It is estimated that there is more help available in New Bedford at the present time than in any period of the past three years.

Massachusetts, North Brookfield. Benjamin C. Mudge is trying to reorganize the Oxford Linen Mills and has sent out circulars advertising stock of the reorganized company. The circular states that a new company has been formed to start up the mills as soon as the affairs of the old company are settled, and makes the statement that old stockholders have subscribed for $150,000 of stock.

New Hampshire, North Salem. There are two concerns now located in the old Atlas Mill; the New Hampshire Shoddy Co., manufacturing shoddy and cotton bats, moved into the plant several months ago, and as noted in October, H. I. Emmons Company, Inc., formerly of Methuen, Mass., have rented part of the plant to carry on a waste handling business, doing bleaching, dyeing, cleansing and oil extracting.

*New Jersey, Carlton Hill. There will be no increase at present in the plant of the Standard Bleachery Company. The recent increase in the capital stock from $400,000 to $1,000,000 was for the purpose of a readjustment of the surplus account.

New Jersey, Montville. Preparations are being made to clear up the fire ruins of the plant of John Capstick & Sons, bleachers, dyers, printers and finishers, which was burned in February. It is probable they will take up the matter of rebuilding the plant the coming year. The old plant was entirely destroyed, there being nothing left of the manufacturing plant whatever.

New Jersey, Paterson. A broad silk concern located in the Todd Mill and operating under the style of S. K. S. has sold out the plant and purchased a part of the plant of the Passaic Silk Company in the new Hall Mill. The Passaic Silk Company has not retired from business but is operating the portion of the plant that has not been disposed of by sale.

New Jersey, Paterson. A new corporation has been formed under the name of the Forest Silk Company, 125 Ellison St., by R. H. Moxham, D. Ashley and A. Comstock.

New Jersey, Paterson. The Penn Silk Company has been incorporated with capital stock of $50,000 to manufacture and deal in silk goods. The incorporators are Harry Levin, David Kaufman, Meyer Tanner and Samuel Kutchner. The address given is 152 Market St., Harry Jollson in charge.

New Jersey, Paterson. In the recent denial that the National Silk Dyeing Company would be consolidated with the Weidmann Silk Dyeing Company it was stated that the former concern has plans well under way for greatly increasing the piece dyeing plant at Dundee Lake.

New Jersey, Paterson. Jackson Bros., Inc., who moved from this city to Passaic have recently returned and are now located at 11 1/2 Fair St. No immediate increase of equipment will be made.

New Jersey, Plainfield. The Jersey Silk Mills, which succeeded the Mitchell-Watchung Silk Mill several months ago, is manufacturing broad silks. The recent foreclosure of a mortgage on the plant was for the purpose of clearing up the title for the Jersey Silk Mills and in no way affects the operation of the plant.

New York, Ballston Spa. The Clark Textile Company of Saratoga Springs has leased a floor in the Wiley Bldg. for a term of five years and the Ballston Spa branch will be moved to the new quarters about December 1.

MILL NEWS

*Georgia, Quitman. The sale of the Atlantic & Gulf Mills property to the Bank of Quitman has been confirmed by the court. Steps will be taken to organize a new company and start up the plant.

Georgia, Springfield. The Chamber of Commerce is trying to secure the establishment of a cotton mill here.

*Illinois, Joliet. The project to establish a branch of the Lacon (Ill.) Woolen Mills in Joliet has been dropped.

Louisiana, Homer. A company is being organized by E. S. Mitchell to build a cotton mill. Information on buildings, machinery and supplies is desired. Mr. Mitchell's headquarters are in the McCranie Bldg.

*Maine, Skowhegan. It is reported the American Woolen Company is to spend between $100,000 and $200,000 in the improvement and equipment of the Marston Mill, recently purchased.

Massachusetts, Boston. The Haddon-Briggs Company has been incorporated with capital stock of $5,000 to deal in yarns, tops, noils and waste. The incorporators are Alfred Newsome Briggs, of Jamestown, N. Y., president; Alexander W. Haddon, 185 Summer St., Boston, treasurer; and William Odlin, clerk. The new corporation takes over the business of A. W. Haddon, 185 Summer St., commission merchants.

Massachusetts, Boston. A new corporation has been formed under the name of William Whitman Company to take over the business of William Whitman & Company. The capital stock is $4,000,000, classified as $1,000,000 preferred and $3,000,000 common, all of which represents actual property. William Whitman will be president; Arthur T. Bradlee, vice-president; Malcolm D. Whitman, vice-president; and Hendricks H. Whitman, treasurer. The following men with the officers will form the directors: Louis H. Fitch, Francis R. Masters, George H. Waterman, William Whitman, Jr., Eben E. Whitman and J. Clifford Woodhull. No outside capital has been added and none of the stock of the corporation is for sale. Under the corporate form the business will be conducted as heretofore. J. Clifford Woodhull and Francis R. Masters are new members of the organization.

Massachusetts, Easthampton. Many of the looms in the plant of the Glendale Elastic Fabrics Company, which have been idle for several months, have been started up. There is a marked improvement in the various mills in Easthampton.

Massachusetts, Easthampton. At a meeting of the stockholders of the George S. Colton Elastic Web Company it was voted to reduce the capital stock from $300,000 to $100,000 and then to increase to $250,000 by issuing 1,500 shares of 6 per cent. preferred stock. The new issue of preferred stock will be a stock dividend to the present stockholders.

Pennsylvania, Philadelphia. The L. S. Hosiery Mills, 31 So. Third St., have removed their plant to 37 and 39 S. Third St., where they have secured three large floors. They buy goods in the grey from other manufacturers and sell direct.

To Fold to Any Length

From the Yard-Folded Piece to the Table,

In even folds with an even front edge

One boy does the work better, easier and faster than two can do it by hand.

The RODWAY Type . . . $150.
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Silk Throwing and Waste Silk Spinning — *Rayner*

Deals with the preparation of yarn from the raw silk; also waste silk spinning and the utilization of waste products. For silk manufacturers or workers, or for men who use silk in connection with cotton, worsted or wool. 158 pages; 117 illustrations; cloth. Price, $2.50 Prepaid.

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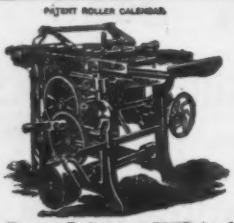

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RESULTS: Better Spinning! Fewer Broken Ends! Economy in Roll Covering!

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MILL NEWS

New Hampshire, Tilton. A serious fire in the Tilton Mills, which started from an overheated bearing, caused loss to the concern of more than $10,000, chiefly by water.

New York, Brooklyn. Fire in the building at 435 Broadway, occupied by the North American Knitting Mills Co., manufacturers of sweater coats and similar goods, and the Milton Mfg. Co., manufacturers of silk neckwear and infants' goods, caused considerable damage. The North American Knitting Co. carries $8,800 insurance on stock and $8,700 insurance on fixtures and machinery. The Milton Mfg. Co. carries insurance of $9,000 on stock and $7,000 on machinery.

New York, Cohoes. A shed owned by the Harmony Mills, which was used to store cotton, has been damaged by fire with loss estimated at $2,000.

New York, Cohoes. The plant of the Hope Knitting Company, manufacturers of men's and women's flat and ribbed underwear, has been damaged by fire with loss estimated at about $1,000; fully covered by insurance. The fire was caused by some hard substance getting in one of the wool pickers.

Pennsylvania, Philadelphia. The building occupied as an embroidery factory by Frank J. Minett, at 5719 Walker St., Wissinoming, has been damaged by fire. The loss on building and contents is about $10,000.

Rhode Island, Woonsocket. A loss of about $1,000 was caused by fire in the plant of the Lafayette Worsted Company, which was started in the drying room.

Rhode Island, Woonsocket. Fire in the plant of the Guerin Spinning Company badly burned two of the employes and caused some loss in the picker room.

South Carolina, Columbia. Fire at the plant of the Massasoit Mfg. Company, which originated in the picker room, caused considerable damage. This is a branch of the Massasoit Mfg. Co., at Fall River, Mass.

*California, Long Beach. F. W. Stevens, a leading citizen of Long Beach, will be president and treasurer of the new California Woolen Mfg. Co. J. F. McAfee, formerly of Topeka, Kans., is manager. Particulars of this concern have been given in previous reports. A three-set mill is being built and it is expected it will be completed before January 1.

California, Los Angeles. A concern has been organized under the style of the China-American Ramie Co., with authorized capital stock of $500,000 to cultivate the ramie fiber. The incorporators are A. R. Carney, M. L. Abbott, E. P. Gaffney, J. W. Alexander, and J. P. Transue, all of Los Angeles. It is understood the new concern will acquire land in southern California on which to cultivate the ramie plant and later it is expected that the concern will be in a position to establish a plant for handling the fiber and manufacturing cordage and fabrics.

MILL NEWS

Canada, Ontario, Toronto. E. E. Palmer of the Toronto Type Foundry Co., Ltd., 70 York St., Toronto, heads the new corporation recently formed under the name of Patent Twines, Ltd., with capital stock of $40,000 to manufacture and deal in twines, rope and cordage. This concern has branches for handling supplies for printers, bookbinders, and box makers. Mr. Palmer declines to give out any nformation in regard to the new company until they get started, which he states will be in the course of the next three months.

Canada, Ontario, St. Catherine's. A new plant is being built on Lincoln Ave., St. Catherine's, by the Canadian Flax Mills, Ltd., Toronto. It will be completed about Jan. 1, 1914. The new plant will make simply flax fiber and tow at first, but in the spring they hope to get started on a spinning mill. Electric power will be used. This concern has capital stock of $1,000,000. George H. Campbell is president, manager and buyer, and Austin Campbell is treasurer.

*Connecticut, Jewett City. A new boiler is to be installed next spring in the plant of the Jewett City Textile Novelty Company, dyers, printers and finishers of textile fabrics. The plant was shut down recently for a few days to reset their two boilers, to install a forced draught blower system, repair the generator, and make other repairs of a general nature needed throughout the plant.

Massachusetts, Hyde Park. A plant is being established at 1586 Hyde Park Ave., by the Alpha Waste Products Co., reported incorporated several months ago. They will conduct a business of cleansing and processing oily cotton waste, beginning operations about December 1, probably. George S. Wood is president; Charles E. Peakes, treasurer; Edward Heaton, superintendent. Mr. Wood attends to the buying. The Boston office is at 620 Atlantic Ave., Room 220.

*Massachusetts, Lowell. The New England Cable Company, a new concern which has leased a part of the old Belvidere Woolen Mill on Howe St., will begin operations January 1. A business of insulating wire in all its branches will be carried on and the equipment will consist largely of braiding machines. The capital stock is $40,000. D. J. MacDougall is president; and Samuel Dunsford is treasurer, agent and buyer.

Massachusetts, Webster. The addition to the Stevens Linen Works, which has been under construction for several months, was put into operation during the week. The old hackling department was moved into the new quarters and the old quarters will be abandoned for manufacturing purposes and used for storage. Electric power is used and individual motors are the rule, although in some cases several machines are connected to one motor.

*Wisconsin, Sheboygan. It was not expected that the new 3-story warehouse and office building for the Hand Knit Hosiery Company would be built until spring. The contract has been awarded, however, and construction work is proceeding. This building will be 52 by 100 feet, and will be used for office, warehouse and shipping departments.

Interruption of Production

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are so liberally designed and so sturdily constructed that they will operate for years without need of repairs providing they are properly supplied with oil while in service.

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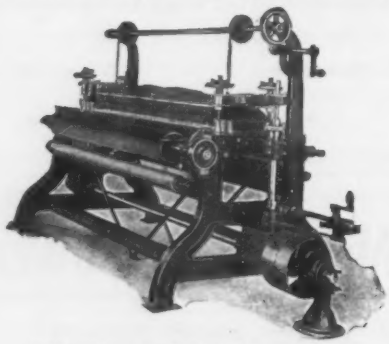

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Send for booklet.

James Hill Mfg. Co.
Providence, R. I.

MILL NEWS

*Canada, Ontario, Listowell. The new Perfect-Knit Mills, Ltd., began manufacturing this week with 11 knitting machines and 10 sewing machines, making sweater coats and knitted novelties. Max K. Becker is president, superintendent and buyer; William Climie is treasurer. Electric power is used. Mr. Becker was formerly superintendent of Frank W. Robinson, Ltd., of Toronto, and organized this new concern to succeed the Keystone Knitting Co., of Georgetown, Ont. The equipment of the Keystone Company has been moved to Listowell.

Ohio, Tippecanoe City. The old plant of the Tippecanoe Underwear Company has been bought by the Superior Underwear Company of Piqua, O., and is being run as a finishing plant with 50 sewing machines, giving employment to about 75 people. All the knitting is done at Piqua.

*Vermont, Bennington. The E. Z. Waist Company has purchased the plant of the Vermont Hosiery & Machinery Company and it is reported will start equipping the building at once in order to resume manufacturing as soon as possible. The Vermont Hosiery & Machinery Company shut down the mill nearly two years ago. The plant of the E. Z. Waist Company was destroyed by fire a few days ago with loss estimated at from $75,000 to $100,0000. The insurance was $60,000.

Wisconsin, Superior. The Superior Knitting Mills Company has been incorporated with capital stock of $20,000 by William A. Whitney, H. V. Gard and Ella Brotherton. The new corporation will take over and start up the plant of the Superior Knitting Mills which was purchased several months ago by Mr. Whitney.

South Carolina, Columbia. The machinery formerly used in the Columbia Hosiery Mills which was located at the State Prison, is being shipped to the Savannah, Ga., plant of G. H. Tilton & Son. The contract for convict labor has expired. G. H. Tilton & Son have been enlarging the Savannah plant for some time to receive this additional equipment. J. M. Graham, who was manager of the Columbia Hosiery Mills, is to manufacture cotton hosiery on his own account under the style of J. M. Graham & Son.

*New York, Theresa. The Lincoln Silk Co., of Paterson, N. J., which recently leased the Theresa Silk Mill, has begun operations and is gradually starting up more machinery. The property has been leased for one year with option of purchase and if labor conditions prove satisfactory it is expected additional looms will be installed. Tie silks and dress silks are being manufactured.

*Virginia, Charlottesville. Manufacturing has been begun in the new Charlottesville Silk Mills, but some little time will elapse before the plant is running to full capacity. This is a reorganization of the Philipsburg Silk Company at Philipsburg, N. J., which was moved to Charlottesville.

Canada, Quebec, Montreal. Holdsworth & Co., 16 Cote St., who carry on a business of shrinking and refinishing goods, contemplate establishing a new plant at Montreal which will give greatly enlarged facilities.

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Cotton Combing Machines. *Thornley*	3.00
Mercerization. (2 vols.)	7.50
Simplex Tables	.50
Textile Fibres. *Matthews*	4.00
Study of Textile Design. *Barker*	2.50
Worsted Spinning. *Priestman*	2.50
Worsted Handbook. *Buckley*	.50
Bleaching and Finishing of Cotton *Trotman and Thorp*	5.00
Chemistry and Practice of Sizing *Bean and Scarisbrick*	10.00
Chemistry and Practice of Finishing (2 vols.) *Bean and McCleary*	15.00
Textile Printing. *Knecht and Fothergill*	10.50
Manual of Cloth Finishing (Wool)	6.50
Art of Soap Making. *Watt*	3.00
Carpet Manufacture. *Bradbury*	3.00
Bleaching and Dyeing Vegetable Materials. *Hubner*	5.00
Color in Woven Design. *Beaumont*	6.00
Cotton Spinning (3 vols.) *Taggart*	7.50
Silk Throwing and Waste Silk Spinning *Rayner*	2.50
Manual of Dyeing (2 vols.) *Knecht, Rawson and Loewenthal*	12.00
Calculations in Yarns and Fabrics *Bradbury*	1.25
Wool Combing. *Priestman*	1.50
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Woolen Spinning. *Priestman*	2.50

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and

Wyandotte Concentrated Ash

and because of the unusual nature of these claims it is appreciated that they must be proved before you can be asked to accept them.

All we ask is that you withold your decision regarding these products until you give them a trial. The satisfaction which you feel after trying them will do the rest. We have no doubt of your continuing in their use, because they do the things you want done—the things you never could without alkalies.

Ask us to "show you." For further information, write us.

Order from your supply house.

The J. B. Ford Co., Sole Mfrs., Wyandotte, Mich.

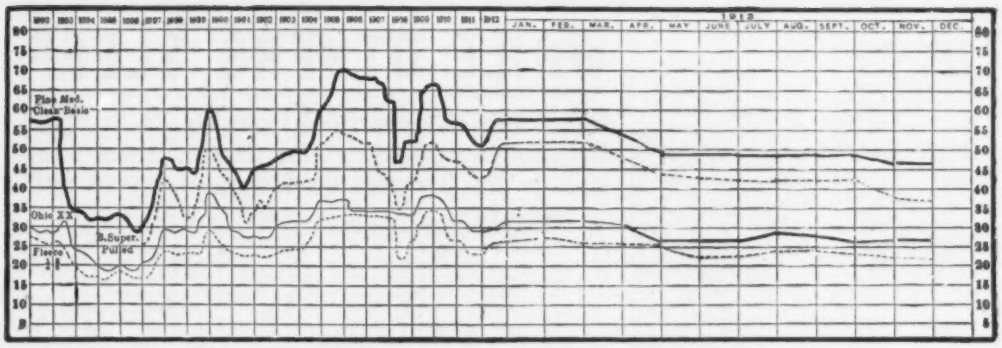


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

THE WOOL MARKET

The domestic market for wool has been stagnant owing to the change in the tariff on Dec. 1 to a free wool basis. Withdrawals previous to that date were exceedingly small. On December 2 there was a rush to get wool delivered in order to supply some pressing needs of the mills. It is stated on good authority that stocks of the mills are very low, owing to the policy of withdrawing or buying only to meet immediate requirements, and also because of the fact that a number of large mills converted a considerable quantity of foreign wool into tops which were exported under the drawback provision of the law before the passage of the Underwood bill. The London sales have been fairly strong, but throughout the foreign markets there is a pronounced feeling of uneasiness over reaction that has developed in all lines of business.

The home market for wool goods has been slow. Manufacturing clothiers report a decided falling off in business, the retailers saying they prefer to wait for developments after January 1, when the reduced rates on wool goods go into effect. Owing to the present methods of doing business the attitude of the retailer has an immediate effect on the mills, and this is what accounts for the decreased production of woolens and worsteds. To offset these influences there is the fact that the supply of wool is below the world's requirements.

MILL NEWS

*Pennsylvania, Parkers Landing. A charter has been granted the Parker Woolen Mills with capital stock of $10,000. The organization of this concern by Messrs. A. E. and J. O. Conn, whose plant at Emlenton was destroyed by fire in September, has been noted previously. A mill is being built and will be equipped with one set of cards to manufacture woolen yarns, 6 to 26s cut.

Pennsylvania, Philadelphia. John Gallashan, who has been running a plant for examining, burling and mending textile fabrics, at Mascher and Turner Sts., has recently installed several looms on which he is making cotton, woolen and worsted fabrics on commission. This portion of the plant he states will be enlarged at an early date.

Pennsylvania, Philadelphia. The Myers-Jolesch Co., Inc., of 334 Fourth Ave., New York, have installed 16 broad looms in the tenement mill at the N. E corner of Howard St. and Montgomery Ave., on which they are manufacturing a line of woolen and worsted cloakings, which they are selling direct.

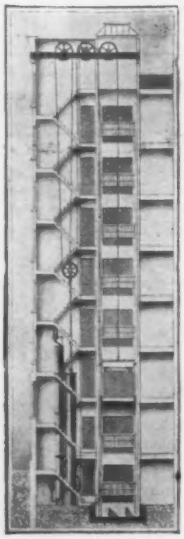
TETRAZO COLORS
FOR COTTON

We offer these products in all shades for the dyeing of cotton in any form. Among them will be found colors specially adapted to meet the various requirements of fastness to light, washing, cross dyeing and fulling.
Shade cards and samples, with full information, cheerfully furnished on application.

AMERICAN DYEWOOD COMPANY
NEW YORK PHILADELPHIA BOSTON HAMILTON, ONT.

Direct Acting

Double Geared



Elevator in Large Soap Factory in Jersey City

WHILE OTHERS SLEEP

LISTEN WUNST! — The Yale & Towne Mfg. Co., Stamford, Conn., are having us change the elevators in that great plant to the Ridgway Steam-Hydraulic — KETCH ON?

The **Yale & Towne** are makers of hoisting machinery themselves. They have engineers who know a thing or two. Well, I guess so.

As we have already told you, the **Standard Oil Co.** is having us change their elevators to Steam-Hydraulic where they have steam available (just finished their Albany plant) and among plants we have done for them is one near Stamford.

The **Yale & Towne** engineers are not "DEAD ONES." They caught on and are going to have good elevators, too.

Joseph Benn & Son at Providence, R. I., did the same.

The **Somerville Worsted Mills**, Somerville, Conn., are having us change their elevators to Steam-Hydraulic.

The **Summit Thread Co.**, East Hampton, Conn., are having us change their elevators to Steam-Hydraulic.

The **Ontario Dyeing Co.**, Philadelphia, have just changed their elevators to Steam-Hydraulic.

The **Arnold Print Works**, North Adams, are changing their elevators to Steam-Hydraulic.

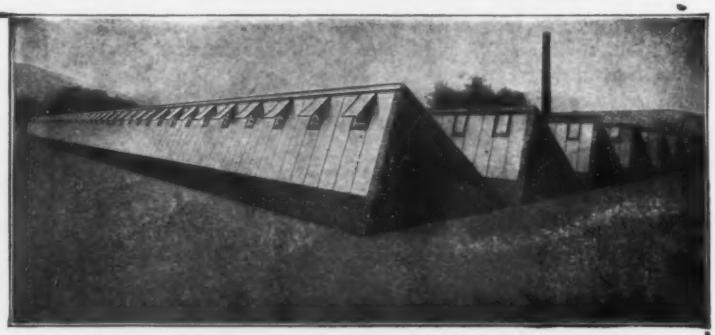
Why, bless your heart, we could fill this page with textile mills alone. Why in the world every mill and factory owner should not get these wonderfull elevators as soon as he knows about them is only another proof that just one man in a hundred is really a FULL LIVE MAN and fit for manager. If you are tha HUNDREDTH MAN you will

"HOOK 'ER TO THE BILER"

CRAIG RIDGWAY & SON CO., Coatesville, Pa.

ELEVATOR MAKERS TO FOLKS WHO KNOW

Ventilation Results At a Low Cost



Don't you often stop at FIRST COST and forget the bigger item of the future MAINTENANCE.

Don't you occasionally have trouble with a skylight leaking or giving out altogether or a window opening device getting cranky or busting up. This is where the MATERIAL reference comes in.

And now for RESULTS.

Anti-Pluvius puttyless skylights and Straight-Push and Lovell sash operators are doing for others highly satisfactory service without more than ordinary attention, this in our understanding of results. Specializing is skylights and sash openers with trade names

ANTI-PLUVIUS (Trade Mark) **Puttyless Skylights**

that have a factory and organization behind them, we aim to provide what will obtain the maximum returns for the expenditure. Drouvé stands for quality and another way to spell this is RESULTS.

The G. DROUVÉ CO., Bridgeport, Conn.

180 N. Dearborn Street, Chicago, Ill.

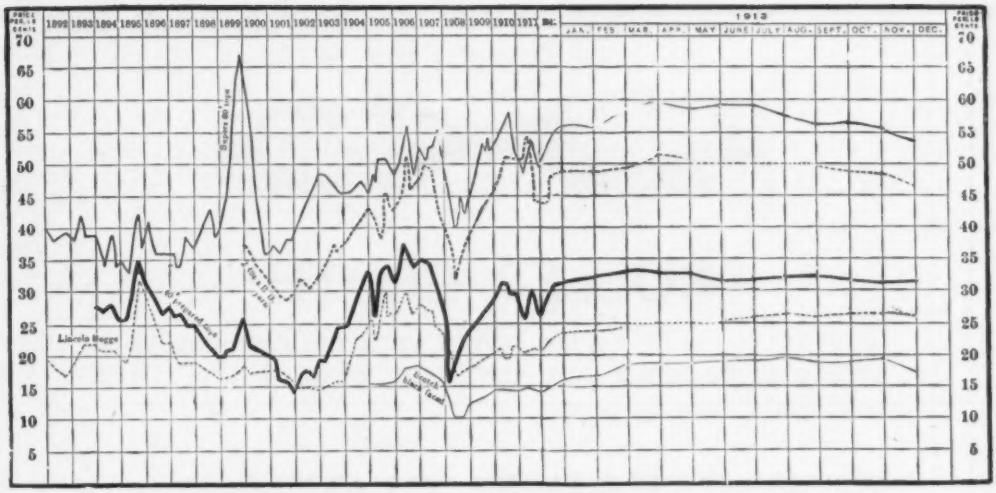


CHART SHOWING COURSE OF PRICES FOR WOOL, TOPS, AND WORSTED YARN AT BRADFORD, ENGLAND

THE BRADFORD MARKET

Bradford, Eng., Nov. 25, 1913.

Demand for yarns and piece goods is at a lower ebb than for fully five years past and the impossibility of doing business at the prices lately ruling explained the forced reduction of quotations for tops and wool. The change from brisk to bad trade seems to originate with the universal tightness of money and there is little prospect of a recovery until prices are still further reduced. An altogether lower basis will have to be found for the business of next year, for many looms are standing. Spinners of merino who have consistently had the best of the market are far from selling their full production, despite their sacrifice of profit margins. The crossbred yarn market has less support than hitherto from the home trade and the business for export is small and at bad profits.

The reductions of price thus far made have not served the purpose of bringing out new business, and it is therefore the more certain that prices will go lower. A sharp fall down to a firm bottom would suit many parties best.

English wools are the only ones to retain a show of firmness and this is due to their position as specialties and their comparative scarcity.

MILL NEWS

Connecticut, Bridgeport. Bids are being received by the Salt's Textile Mfg. Co. for the construction of a $75,000 addition at the east side of the plant.

*Connecticut, Stafford. Twelve of the latest model, six-quarter fast running woolen looms have been installed in the Riverside Woolen Mills to take the place of twelve older looms.

Massachusetts, Millbury. Four new looms are being installed in the plant of the Millbury Mills, manufacturers of worsteds.

*Massachusetts, Webster. The new mill for which S. Slater & Sons, Inc. have just awarded the contract at $110,000 is to replace old buildings. It is expected to be in operation in six months. This new building will be used as a yarn mill and will be 4 stories and basement, 175 by 132 feet, of brick construction. This new space will be largely filled up with machinery from other buildings and a rearrangement of the wool sorting, scouring, drying and yarn departments will be made.

Pennsylvania, Bridgeport. The Sterling Mills Company, of which Fred. Hird is now the superintendent, has increased the spinning department to 6 sets and 300 spindles. Cassimeres are manufactured on 38 looms.

Pennsylvania, Clifton Heights. The Caledonia Worsted Mills, manufacturers of cotton worsteds and cotton and wool mixed goods, with six sets, have recently increased their weaving equipment to 150 looms in addition to operating several hundred looms located in other mills in different sections of the country on commission. They are very busy.

Pennsylvania, Philadelphia. Joseph D. Swoyer & Co., Inc., manufacturers of woolen and merino yarns, are to increase their plant. About three-fourths of the building at Howard and Berk Sts. is now occupied and additional space will be taken over when vacated by other tenants whose leases soon expire. Five sets of cards and 3,000 spindles are operated at present with Christopher Berry as superintendent. The main office is in the Mariner & Merchants Bldg.

ROLLER CLOTH

In order to produce good cotton yarn the cloth on your rollers must afford just the right cushion and have uniformly even surface

CLEARER CLOTH

must have thick, strong nap that does not pull out and is of uniform length so that it will clear the rolls of ***all*** short fibres

SLASHER CLOTH

to give you good service must be porous and have sufficient cushion to thoroughly force the sizing into the yarn. To be economical it must have exceptional wearing qualities

The only way to be sure of getting Roller, Clearer and Slasher Cloths to meet your exact needs is to order those that bear the trade-mark of the oldest, largest and most progressive felt manufacturer in the country

American Felt Company

TRADE MARK

BOSTON, 103 Bedford Street
NEW YORK, 114 E. 13th Street

If your supply house is out of stock, we will ship to you direct. Make sure your roller coverer uses our brand. The trade-mark is your guarantee

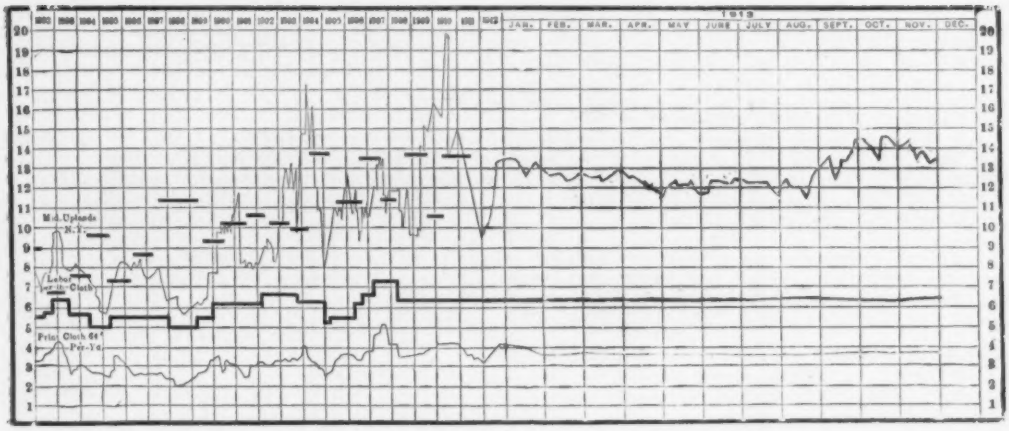


CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE

The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

THE COTTON MARKET

The tendency, as our chart clearly shows, has been for cotton prices to seek a lower level. This has been due to the pronounced falling off in the cotton trade abroad, the financial stringency, the movement into sight and the improved prospect for the present crop. The agitation for a reform of cotton exchanges continues to restrict speculation. The movement into sight from Sept. 1 to Nov. 28 is estimated by the "Chronicle" for a series of years as follows:

Year	Bales
1913, Nov. 28	7,112,024
1912, Nov. 29	7,109,898
1911, Dec. 1	7,035,791
1910, Dec. 2	6,203,729
1909, Dec. 3	5,992,894

The same authority reports the world's visible supply of cotton on Nov. 28 at 5,379,906 bales, as compared with 5,650,310 bales on the corresponding date of 1912, 4,706,034 bales in 1911, and 4,324,139 bales in 1910.

Quotations for leading grades of Egyptian cotton are reported by Richards, Atkinson and Haserick as follows:

MILL NEWS

*North Carolina, Greenville. R. B. Biberstein of Charlotte has been engaged as architect-engineer for the new Greenville Cotton Mills, Inc., recently organized. The proposed mill will be of brick construction, 250 by 80 feet, with separate boiler and engine rooms, and will have 5,200 spindles and steam power plant to manufacture cotton yarns. Construction bids will be opened about the middle of December. J. G. Moye is president; E. B. Higgs, vice-president and treasurer, and W. H. Norris, manager and buyer.

*Rhode Island, Rockville. The new Yawgoo Line & Twine Company will begin manufacturing at Hopkinton this month. This concern was organized last May and took over the vacant mill at Hopkinton which has been transformed by the construction of a line walk and other additions and improvements into a yarn, twine and cordage plant, which will employ about 50 hands. A specialty will be made of tarred work. The plant contains a dye house and has steam and water power. The Yawgoo Line & Twine Company was incorporated with authorized capital stock of $50,000, of which $25,000 has been issued. G. B. Langworthy, of Ashaway, is president; Frank Hill, Ashaway, is treasurer; and Osmas Edwards of Rockville, is manager and buyer.

*Alabama, Florence. Construction work is progressing on a 75 by 40-foot addition to the plant of the Ashcraft Cotton Mills and on completion of the new manufacturing space new machinery costing $20,000 will be installed. It was noted in October that the Ashcraft Cotton Mills plan to manufacture fancy cotton dress goods for converters in addition to their line of brown sheetings.

Alabama, Huntsville. Thirty new looms have been installed in the Abingdon Mills replacing a few old looms. Ducks, drills and osnaburgs are manufactured.

WEIMAR BROS. MANUFACTURERS OF Cotton Mercerized Tapes
SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES
Phone Connections. Works, 2046-48 Amber Street, PHILADELPHIA, PA.

MILL NEWS

Alabama, Jacksonville. Spinning equipment and preparatory machinery for cotton yarn production will be installed in the Verlina Mill by the Profile Cotton Mills, the owners of the property. The Verlina Mill was originally equipped with 200 looms to weave Turkish towels and fancy cotton weaves. The building was taken over by the Profile Cotton Mills nearly a year ago and has since been idle. The looms have been removed and sold.

Alabama, Piedmont. An addition of two combers, one spinning frame and two twisters has been made to the equipment of the Coosa Mfg. Company.

*Georgia, Manchester. On the completion of the 2-story brick addition to the plant of the Manchester Cotton Mill, 5,000 new spindles will be added to the equipment.

*Georgia, Summerville. Work has been started on the foundation for the additional mill to be built by the Summerville Cotton Mills and the enlargement will be pushed rapidly to completion.

*Maine, Lewiston. Good progress is being made on the enlargements at the plant of the Bates Mfg. Co. and before the end of the month the large new weave shed will be roofed over. The new power department development will be completed when the new weave shed and other increases are finished. It is not expected, however, that the new equipment will be added this winter. As noted in previous reports the enlargements being made by the Bates Mfg. Co. will provide for approximately 75,000 additional spindles and 2,000 additional looms.

Massachusetts, Fall River. The Parker Mills have changed over a large part of the weaving department to wide looms and now have 2,096 narrow looms and 1,043 wide looms.

Massachusetts. Lowell. Additional power is required by the Merrimack Mfg. Company and a 3,000 k. w. turbine will be installed. It probably will not be in operation until about the middle of 1914.

*Massachusetts, New Bedford. Stockholders of the Beacon Mfg. Company have voted to issue new stock to the value of $300,000, one-half to be preferred and one-half common. The proceeds from the sale of the new stock are to be applied on the addition to be built to increase the carding and spinning departments better to balance these departments with the rest of the plant, as noted earlier in the month. There is a possibility that some looms will be added also. Plans for the addition are being drawn by Knight C. Richmond of Providence, and ground will be broken at once. The addition will be located on the north and west sides of the plant.

Massachusetts, Webster. Plans are being prepared for a new weave shed and spinning room to take the place of the oldest building of the cotton plant of S. Slater & Son. Inc.

New Hampshire, Manchester. Forty-four looms have been received by the Amoskeag Mfg. Co. About 3,700 new looms have been installed by the Amoskeag Company during the last two years. A change is being made in the method of driving the spinning frames on the fifth floor of No. 1 mill. The worsted department is closed this week but will open next Monday.

New Hampshire, Nashua. Increases are to be made in the equipment of the Nashua Mfg. Company to take care of the increasing business. The treasurer states that nothing definite has been worked out although it is understood that orders for some new machinery have been placed. Cotton flannels, domets and blankets are manufactured and an announcement has been made to the effect that the mill is sold up and the lines have been withdrawn for the current season. The increases to be made will probably embrace many changes and additions.

*North Carolina, Gastonia. The addition to the plant of the Ozark Cotton Mills, on which work was started in August, is nearing completion and the new space will soon be ready for occupancy.

North Carolina, Gastonia. The only change being made in the equipment of the Arlington Cotton Mills, who are currently reported as enlarging, is the installation of one new comber.

*North Carolina, Gastonia. Early next spring the addition being built by the Dunn Mfg. Company will be equipped ready for manufacturing. This enlargement will increase the capacity from 6,400 spindles to 10,000 spindles. The contract for new combers has just been placed. R. C. Biberstein, of Charlotte, is in charge of this enlargement.

*North Carolina. High Point. According to report the Pickett Cotton Mills, manufacturers of print cloths, are considering plans for increasing from 12,000 spindles and 300 looms to 30,000 spindles and 750 looms. Nothing definite can be learned of the rumor that a new cotton mill company is to be organized in High Point and it is probable the report of the new mill referred to the Pickett Mills' enlargement.

North Carolina, Kannapolis. Ground has been broken for a new 4-story brick warehouse for the Cannon Mfg. Company.

*North Carolina, Landis. In accordance with the recent announcement the Corriher Mills, built several years ago but never used, are being equipped. The concern is proceeding to install machinery. There will be 4,000 spindles and preparatory machinery driven by electric power.

North Carolina, Lowell. An addition to the plant of the Peerless Mfg. Company is practically completed and a sprinkler system is being installed. Combed yarns are manufactured on present equipment of 5,000 ring spindles. John C. Rankin is president and superintendent, and S. M. Robinson is treasurer and buyer. Messrs. Rankin and Robinson are interested in building a new mill at Charlotte, as reported in another part of this issue.

DODGE

Dodge Capillary Self-Lubricating Bearing

Cut Out the "Oil Patrolman"

OLD style bearings require an "Oil Patrolman."

He costs about $2.00 per day—$600 a year.

He takes care of 150 bearings per day.

Dodge Capillary Self-lubricating bearings save you that $600.

They save you a waste of oil, loss of time caused by "shut-downs," an account to the oiler, and a possible damage suit to you.

Clean and fill Dodge bearings once or twice a year—your line runs more smoothly and efficiently at $4.50 per bearing less per year.

Dodge bearings are interchangeable in Dodge hanger frames.

Any of our branches or selling agents can fix you up with the proper size, or you can get in touch with "Dodge-Mishawaka."

Dodge Manufacturing Company

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Mishawaka, Indiana

Branches and Agencies in all Principal Cities

Why did the American Woolen Co.—

adopt the Kaumagraph Process? The prestige of this great concern demanded a stamp which would give distinction to a piece of goods. Because the Kaumagraph Process gives the most beautiful results of any fabric trade-marking process yet devised — because of its permanence and clearness, its rapidity of operation, and withal, its almost negligible cost, the American Woolen Co. adopted the

KAUMAGRAPH PROCESS

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TRADE-MARK STAMPING FOR ALL TEXTILES

The Kaumagraph Process is the only process that will mark successfully every kind of fabric—dark or light, rough or smooth, ribbed or plain, from silk to blankets. It stamps any design or trade-mark, however elaborate, on any fabric in any color (silver and gold also) with abolute uniformity and perfect detail.

You buy Kaumagraph stamps ***ready for use***, either in packages or in rolls of thin paper tape. They are applied automatically to goods duringsome process of manufacture, or very rapidly by hand with unskilled labor. Their cost is insignificant, especially in large quantities.

Silver and gold stamping costs no more than colors by the Kaumagraph Process. It is much more rapid than any of the decalcomanie processes because Kaumagraph stamps do not need to be cut apart or wet. Kaumagraph impressions are dry, do not blur or offset, and as the composition tends to penetrate the goods instead of remaining on the surface, the Kaumagraph stamp is more permanent than any other on the market.

The Kaumagraph Process is used on practically all fabrics now being advertised. Manufacturers, who are considering trade-marking their goods or adopting more efficient and economical methods of trade marking are urged to write us frankly without thought of obligation. Meanwhile use the coupon now.

TEAR OFF AND MAIL THE COUPON

Kaumagraph Co., 209 W. 38th St., New York

Send me samples and more information
My name, address and firm name are written below

MERCERIZED YARNS

DYERS, BLEACHERS, GASSERS

Dyers of Colors Fast to

SUN AND BLEACHING

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Manufacturing Company

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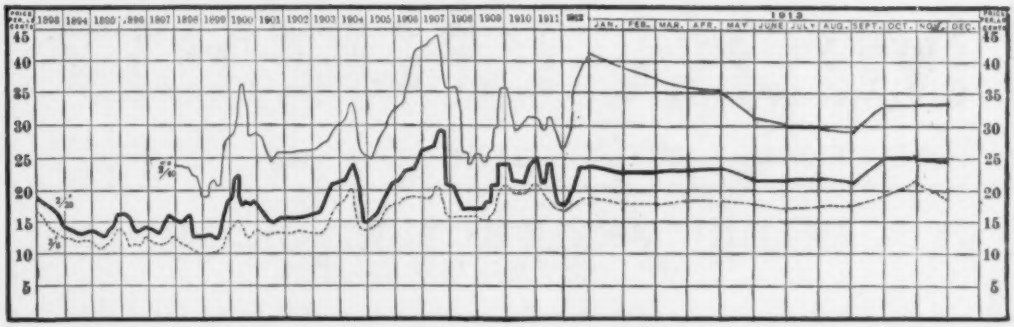

GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

THE COTTON YARN MARKET

The market for cotton yarn has become somewhat easier. This condition is not unnatural when the previous reported advance is considered. A certain reaction is always experienced after a rise in prices. Another circumstance which tends to make prices slightly easier is that manufacturers have advanced the prices of their goods. Until they realize the advance it is but good judgment to be conservative in the placing of contracts for yarns. Deliveries, however, continue extremely good. Stocks are small and some sizes are scarce. Spinners are sold ahead from four to eight weeks and are asking prices fully one cent above today's quotations upon contracts to follow their present orders. The general tone of the dry goods business in all lines is good and business on a whole is much better than in other lines. The textile industry seems to have discounted the effects of the new tariff regulations with the result that there is in the market smaller supplies in proportion to the demand than at any time during a good many years past. Prices are at the bottom and they will be higher after the first of the year.

Eastern Cops

6s	20¾
8s	20¾
10s	23¼
14s	24¼
16s	24¾
18s	25¼
20s	25¾
22s	26¼
24s	26¾
26s	27¼
30s	28¼
34s	30½
36s	31½
40s	33

On cones, ¾c. more up to 14s; 1c. more from 15s to 22s; 1½c. from 23s to 35s, and 2c. above that.

Eastern Two-Ply Skeins, Carded Peeler

12s	24½
14s	25
18s	26
20s	26½
24s	28
26s	29
30s	30
36s	37½
40s	39½
45s	43½
50s	46½
55s	48
60s	53

Eastern Two-Ply Warps, Carded Peeler

2/30s	30½
2/36s	37½
2/40s	39½
2/45s	43½
2/50s	46½
2/60s	54½

THE PHILADELPHIA MARKET

7s and coarser	22
8s and 9s	22¼
10s	22½
12s	23
14s	23½
16s	24
18s	24½
20s	25
22s	25½
24s	26½
26s	27
30s	28
40s	35
50s	40

Southern high grade mule yarns:—

THE J. R. MONTGOMERY CO.

Windsor Locks, - Conn.

MANUFACTURERS OF

Novelty Yarns — Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps — on Beams, Jack Spools, Tubes and Cones. In Fancy Twist, Colors and Printed.

Mercerized Cotton Yarns — Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

ARABOL MANUFACTURING COMPANY,

100 William Street New York.

Sizing, Stiffening, Softening and Finishing Compounds, Glues, Gums, Dextrines, Starches, China Clay, Bone Size and Grease, Soap, Tallow, Weighteners.

EVERYTHING IN SIZINGS, Etc. SAMPLES MATCHED. HIGH GRADE GOODS.

MONUMENT MILLS, HOUSATONIC, MASS.

HIGH GRADE COTTON YARNS White, Colors, Bleached

On Beams, Jack-Spools, Cones, Skeins and Chain Warps

FAST-BLACKS & COLORS | For Woolen Mills a Specialty | WE SELL DIRECT

C. MOORE & CO.

Manufacturers of

Twines, Threads and Yarns

Jacquard Harness Twines of all kinds on hand and made to order

S. W. Cor. Fifth and Market Sts., Phila.

JOHN F. STREET & CO.

Cotton Yarns

PROVIDENCE, R. I.

Providence, Chicago, Philadelphia, New York

JAMES E. MITCHELL CO.

COMMISSION MERCHANTS

COTTON YARNS

122-124 Chestnut Street, - - - Philadelphia, Pa.
Brown Building, 185 Summer Street, - Boston, Mass.

William Whitman & Co

COMMISSION MERCHANTS

COTTON and WORSTED YARNS

BOSTON NEW YORK PHILA. CHICAGO CHARLOTTE

LUDWIG LITTAUER

YARNS

Tram, THROWN SILK, Organzine.
ARTIFICIAL OR WOOD SILK.

Plain, Gassed, Mercerized, Prepared and other Cotton Yarns. Polished and Glazed Threads and Yarns. Mohair and Worsted, Tinsel and Turkey Red Yarns.

Best Quality Harness Twine

109 GREENE STREET, NEW YORK
Silk Throwing Mills BOONVILLE and YONKERS, N. Y.

YARNS

Simplex Yarn Tables.

Showing equivalent sizes of different systems of numbering yarn; cotton, woolen, worsted, etc., so that the sizes of different standards may be quickly compared. Also contains a number of other valuable yarn tables for designers, manufacturers and knitters. PRICE 50c. Textile World Record, Boston.

HIGH GRADE **PRESS PAPERS** FOR SILK, WOOLEN AND KNIT GOODS FINISHING

ALSO Jacquard Cards AND Specialties

THE MERWIN PAPER COMPANY

MILLS: RAINBOW, CONN.-HARTFORD, CONN.

Cones

10s	24
12s	24½
14s	25
16s	25½
18s	26
20s and 22s	26½-27
24s	27½
Southern frame yarn, lower grades:—	
6s and 8s	22
10s	22
Eastern cones (high grade quality):—	
10s	24½
12s	25
14s	25½
16s	26¼
18s	26¾
20s and 22s	27¼-27¾
Skein yarn (mostly Southern):—	
4s and 8s soft	21½
10s and 12s	22½-23
14s and 20s	23½-25
22s	25½
10/2	22½
16/2	23
20/2	24½
30/2	27½
40/2	34
8/2	22
7/6	22
Southern warps:—	
10/1	22
14/1	23
16/1	23½
20/1	25
22/1	25½
26/1	26½
30/1	28
8/2	22
12/2	23
14/2	23½
16/2	24
20/2	25
26/2	26½
30/2	28
40/2	34
50/2	40

MILL NEWS

*South Carolina, Anderson. Preparations are being made to organize a new corporation to take over and operate the Cox Mill, recently purchased by Wellington, Sears & Co., of Boston. A large expenditure is being made in connection with enlargements and improvements incidental to changing over the plant to a fine grade duck mill. Robert E. Ligon, of Anderson, who is associated with another mill controlled by Wellington, Sears & Co., will be manager of the Cox Mill.

South Carolina, Central. Additional lappers and other cotton preparatory machinery have been purchased by the Isaqueena Mill.

P&B
RAMIE YARNS
In all numbers for
Knitting, Weaving and Laces
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THE LINEN YARN MARKET

Reports from Belfast have been far from encouraging, although spinners had previously been optimistic. Business has not been realized at anything near the point anticipated. Spinners, however, report being busy, but commission houses seem to have anything but a bright outlook as business is not coming along as it should. Tow yarns of all counts are very much in demand and prices are ruling firm, although the demand seems to be too restricted to make the outlook bright. In general orders are for immediate delivery and very little of a speculative character. Prices abroad remain the same.

In America there is an increased demand for linen yarns and a larger volume of business is being done each month. Prices on yarns have been reduced from 10 to 15 cents per pound since the passage of the new tariff, while the manufacturer is holding his goods at about the same figure as under the old tariff. The reduction in the price of yarns under the new tariff are said to be about 25 per cent. below the old rate. Our schedule has been changed to meet these figures.

("A" Quality)

35s Lea on cones	85
50s Lea on cones	90
60s Lea on cones	95
80s Lea on cones	1.00
90s Lea on cones	1.10
100s Lea on cones	1.15
110s Lea on cones	1.30
120s Lea on cones	1.50

MILL NEWS

North Carolina, Roanoke Rapids. At a recent meeting of the directors of the Patterson Mills Company the matter of enlarging the mill was considered and it is understood that an addition is to be built. The plant is very busy.

North Carolina, Selma. The Ethel Cotton Mills have sold their knitting machines and dye house equipment to D. B. Mull of the Drexel (N. C.) Knitting Mills. Mr. Mull will move the equipment to Connellys Springs, N. C., as noted in another part of this issue. The Ethel Cotton Mills disposed of the knitting department in order to increase the cotton yarn department and provision is being made to install 3,000 additional spindles with preparatory machinery.

South Carolina, Clifton. New water wheels are to be installed by the Clifton Mfg. Company and the plant is closed for two weeks while this change is being made.

South Carolina, Clinton. It is reported the Lydia Cotton Mills are considering plans for enlargements which will practically double the plant. Six new spinning frames were recently installed.

South Carolina, Clinton. An increase of 3,000 spindles is to be made in the equipment of the Clinton Cotton Mills and this additional machinery is to be installed at once.

South Carolina, Conestee. It has been decided to install 2,000 additional spindles in the Conestee Mills. The matter of replacing the old looms with new automatic looms has not been finally disposed of. The post office address is Greenville, S. C.

*South Carolina, Greenwood. Additions to the equipment of the Panola Cotton Mills will be completed about January 1. It has been noted that 5,300 spindles with preparatory machinery and 125 automatic looms are to be added.

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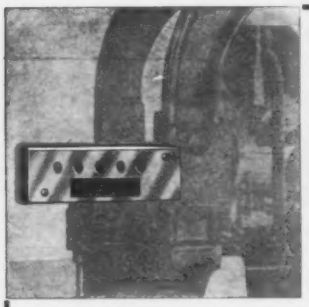

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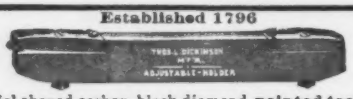

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Roving Spindles and Flyers a Specialty. **Light Forgings.**

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Send for circular. Manufactured by

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MILL NEWS

South Carolina, Inman. The looms in the Inman Mills are being equipped with warp stop motions.

*South Carolina, Lexington. A sprinkler system is to be installed in the plant of the Lexington Mfg. Co. Extensive improvements and repairs have been in progress at this property for several months.

South Carolina, Rock Hill. About 2,000 more spindles with preparatory machinery are to be installed in the Wymojo Yarn Mills. Cotton lace curtain yarns are manufactured.

South Carolina, Valley Falls. Next spring the Valley Falls Mfg. Company will make improvements in the water power equipment and install new water wheels.

*Texas, Dallas. Two thousand, six hundred spindles and preparatory machinery have been contracted for by the Dallas Cotton Mills to replace an equal amount of old equipment. There is no change in the weaving department.

*Alabama, Demopolis. The Demopolis Cotton Mills have begun manufacturing and are making mule spun waste yarns, 1s to 5s, single and ply. This is a new concern which has taken over the Elmore Cotton Mills. The capital stock is $30,000. W. W. Brame has been elected president; George D. Mentz, treasurer; James S. Bradbury, agent and buyer.

*Georgia, Social Circle. Application has been made for a charter for the Social Circle Cotton Mill Company, a reorganization of the Social Circle Cotton Mills. The plant will be started up in the next two or three weeks. W. P. Wallace of Rutledge is chairman of the committee which is organizing the new company and probably will be elected president.

New York, Cohoes. The court has confirmed the settlement of Clute Bros., Inc., with creditors and the bankruptcy proceedings have been dismissed. The plant has been started up again and is running as usual with A. J. Clute in charge.

*North Carolina, High Point. In about ten days the new Highland Cotton Mills, Inc., will begin manufacturing. Full details of this 12,000-spindle hosiery yarn mill have been given from time to time.

*South Carolina, Charleston. The Royal Mills have started up the old plant of the Royal Bag & Yarn Mfg. Company in part, making 4 to 12s yarns, brown sheetings, denims and seamless bags. The Royal Mills is headed by Capt. F. W. Wagener, who is president. P. F. Sullivant is treasurer and R. A. Burris is manager and buyer. Catlin & Co. and the Putnam-Hooker Co. are the selling agents.

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Bias and Straight Cut Fabrics and Ribbons.

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MILL NEWS

Pennsylvania, Philadelphia. H. G. Fetterolf, operating an equipment on Wilton rugs and carpets at Wayne Junction, is arranging for the erection of a new plant on a plot of ground recently purchased at Stenton Ave. and Louden St., on which he will have built a one and three story mill building containing about 55,000 square feet which will cost in the neighborhood of $100,000.

*Rhode Island, Harrisville. One of the two additions to the plant of the Stillwater Worsted Company is now occupied by the finishing department. The other addition is nearing completion.

Rhode Island, Providence. An addition is being built to No. 1 mill of the Atlantic Mills. This is in addition to the building of two stories on the ell of No. 1 mill reported earlier in the month. As noted in another part of this issue the Atlantic Mills will discontinue the branch plant at Stottville, N. Y., and a new company will be formed to operate that plant.

Rhode Island, Woonsocket. An addition is to be built to the Samoset Worsted Mills, 88 by 115 feet, and 2,400 spindles will be added. Bradford spun worsted yarns up to 2/50s are manufactured on present equipment of 10,200 spindles. Charles L. Harding is president; E. S. Dunn, treasurer; and Walter, Scott, agent. Harding, Tilton & Co., are the selling agents.

*Tennessee, Springfield. In addition to increasing the weaving equipment the Springfield Woolen Mills Company are adding a new napper and a new drying machine. The new looms added include two jacquards and eight broad blanket looms. An additional set of cards also has been set up. These increases give an equipment of six sets of cards and 60 looms. Harry Tatham is superintendent and buyer.

West Virginia, Webster. It has been decided to rebuild the plant of the Webster Woolen Mills Company which was burned last February with loss of about $35,000. The capital stock will be increased to $50,000 and the new mill will have about twice the capacity of the old two-set plant. New interests have come into the project.

Connecticut. Stafford Springs. It is reported the plant of A. D. Ellis, which has been closed for several months, is to resume operations. This plant contains three sets of cards and fifteen looms.

*Maine, Camden. Stock has been started through the card room of the Lincoln Woolen Mill, which is being started up by Parker, Wilder & Co., selling agents of Boston. The mill will be operated under the old name of the Lincoln Woolen Company; Charles I. Lincoln in charge.

*Massachusetts, West Millbury. George Geb, overseer of carding for the Franklin Yarn Co., at Franklin, Mass., will start up the carding and spinning departments of the Millbury Mills plant in West Millbury about December 1, on woolen and merino sale yarns. The plant has been idle for some time.

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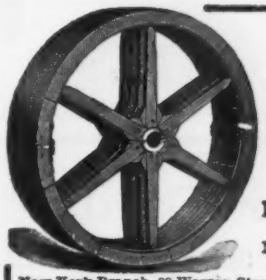

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A single brush costs little, but when you are buying for a big mill the total cost runs high.
Moral: get the best—

That Means Felton's Brushes

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S. A. FELTON & SON CO., Manchester, N. H.

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Burlers, Speckers and Menders of Textile Fabrics

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The Textile Fabric Tester

The only machine that gives the bursting strength in pounds per sq. in. by a simple operation

Two Proofs of Quality in Jumbo Mullen Testers

1. The U. S. Government adopted Mullen Testers as the standard for testing paper.
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The Jumbo Mullen Tester is equally good for testing textile fabrics of all kinds. It is extensively used by hosiery and underwear manufacturers.

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Badger Quality Products for Textile Mills

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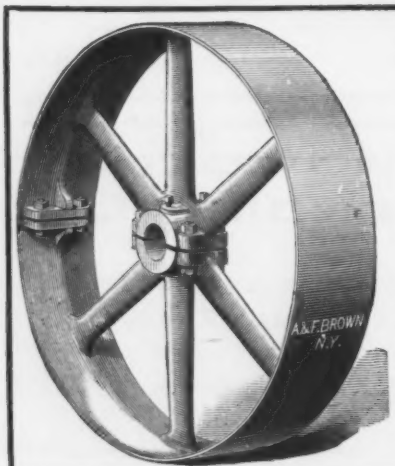

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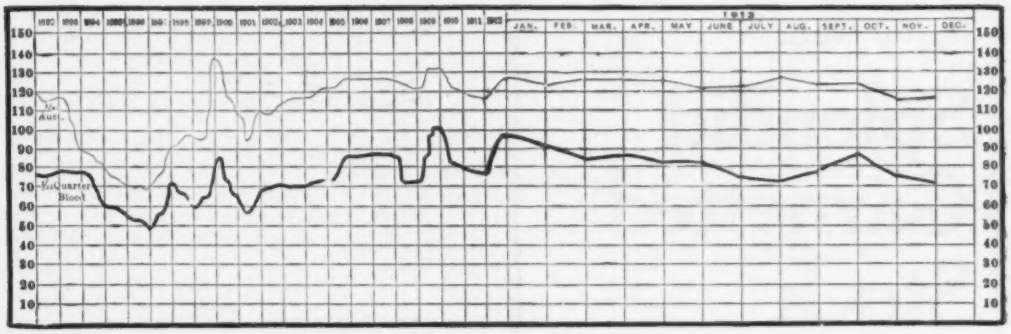


GRAPHIC CHART SHOWING RANGE IN PRICE OF WORSTED YARN.

THE WORSTED YARN MARKET

The demand for worsted yarns, especially French spun, continues in very good volume from the men's wear trade, who are buying single yarns in 30s, 32s and 22s in good high quarters and 1/40s, 2/50s and 2/60s; also fancy mixes and Oxford mixes in 2/40s and 2/50s. These orders, while not large, are being steadily placed for immediate delivery in lots of 2,000 to 5,000 pounds. Deliveries are demanded at once. Vigoureaux mixes are also in good demand, especially in 1/25s in 50, 75 and 95 per cent. black.

Dress goods manufacturers do not seem to be placing much in the way of orders for worsted yarns and are reported as using mainly novelty yarns and cotton with also a line of 1/22s in black and white which they are using in making checked fabrics.

Spinners of Bradford yarn, while not securing the business he should from the weaving trade at this time, has plenty of business from the knitters for whom he is working on orders for immediate delivery in addition to the large quantities of yarns which he has booked for delivery beginning January 1st. A considerable portion of this business is reported as having come from the West with the East coming in a good second. These orders call for heavy rovings from 2/5s up to 2/32s mostly in quarter and 3/8 bloods, the average price being 72 1/2 cents, dyed for 2/16s and other sizes in proportion, the spinners claiming this to be a good price under existing conditions.

Agents representing spinners of foreign worsted yarns in this market report the placing of considerable business for their goods at prices prevailing under the old tariff and for immediate delivery. One house reports the sale of upwards of thirty thousand pounds and states that on future orders prices will be adjusted to meet the new tariff. These yarns are being made up into sample fabrics and it is expected that under the new price quoted by these spinners considerable business will be booked.

BRADFORD SPUN YARN

2/16 Ingrain (black)	54
2/16 Ingrain (light grey)	55
2/16 Ingrain (white)	56
2/12 to 2/16 low common	60-62½
2/20 to 2/24 low 1/4	65-67½
2/20 to 2/25 1/4 blood	67½-70
2/26 to 2/28 1/4 blood	68½-71
2/32 1/4 blood	70
2/20 3/8 blood	70-72½
2/26 3/8 blood	72½-75
2/32 3/8 blood	75-77½
2/36 3/8 blood	80-82½
2/40 1/2 blood	87½
2/40 delaine	95
2/50 delaine	1.00
2/40 Australian	1.15
2/50 Australian	1.25-1.27½
2/60 Australian	1.35-1.37½
3/28 luster	**95**
3/30 and 3/32 luster	**95-97½**
3/36 luster	**1.10-1.12½**
1/24 worsted and 80s single cotton for raincloths	**1.20-1.25**
1/24 worsted and 120 single cotton for raincloths	**1.05-1.10**

FRENCH SPUN MERINO YARNS—FINE ONE-HALF BLOODS

Standard Grade

1/20 50/50 White Merino Cop	65
1/30 50/50 White Merino Cop	67
1/40 50/50 White Merino Cop	70
1/20 60/40 White Merino Cop	68½
1/30 60/40 White Merino Cop	70½
1/40 60/40 White Merino Cop	73½
1/20 70/30 White Merino Cop	71½
1/30 70/30 White Merino Cop	73½
1/40 70/30 White Merino Cop	77
1/20 80/20 White Merino Cop	74
1/30 80/20 White Merino Cop	76
1/40 80/20 White Merino Cop	78
Sliver and Sanitary Mixes	3c. more

If you want

Splendid Garnetted Stock

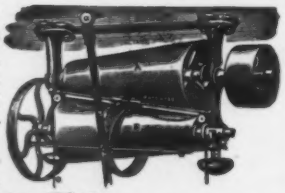
made of
Cotton, Wool or Silk,
the finest the market affords, made by men who are "KEEN" after the work—who delight in doing it right—Then write GRAVES for samples.

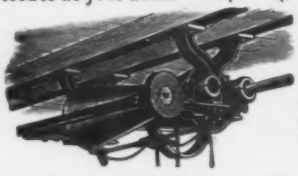
Frank B. Graves Co.
34 Arch Street, Albany, N. Y.

Variable Speed Countershafts

The Evans Friction Cone Pulleys will drive your machines at any desired speed from 1 to 6 by simply pulling a cord.

They are guaranteed to do your work.





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Coning on 1/20 .. .. 2c. more
Coning on 1/30 ..... 3c. more
Coning on 1/40 ..... 4c. more

FRENCH SPUN YARN

1/20 1/4 blood	65
1/20 high 1/4	67½
1/20 3/8	75
1/20 high 3/8	76-78
1/20 1/2 blood	80
1/30 1/2 blood	82
1/40 1/2 blood	84
1/50 delaine	95-97½
1/40 Australian	1.12-1.15
1/50 Australian	1.17½-1.20
1/60 Australian	1.30-1.32½
1/70 Australian	1.40-1.42½

For two ply Knitting Twist add 5c. additional to above prices.

For two ply weaving yarns add 7 1/2c. additional to above prices.

KNITTING YARNS

Dyed and Bleached—Bradford System

2/7s straight 1/4 blood	72½
2 and 3 ply 10s-15s straight 1/4 blood	75
2 and 3 ply 16s-20s straight 1/4 blood	75
2 and 3 ply 20s-24s straight 1/4 blood	77½-80
2 and 3 ply 24s-28s straight 1/4 blood	80

WOOLEN AND MERINO YARNS

The spinners of woolen and merino yarns have about finished up their business for the year and are working on small orders, coming in from time to time, for quick delivery and on sample lots for the coming season. Prices are easier than they were a month ago. The woolen spinner is now in the position where he must adjust his prices to meet the competition of the worsted spinner who is offering yarns at a greatly reduced figure and consequently is the bulk of the business from the knitting trade. The buying today is principally on 2/20 and 2/23 cut yarns and heavier yarns for Shaker sweaters, 2/7s, 8s, 9s and 10s being the predominating counts asked for on this grade with 2/20 and 2/23 cut at 60 to 62 1/2 cents and 2/7s to 2/10s at 57 1/2 to 60 cents. Prices will probably be lower after the first of the year. Some contracts have been placed, but the consumer, as a rule, is holding off with the idea that woolen yarns will be cheaper after the adjustment in prices have been made.

WOOLEN AND MERINO YARNS

2/20 Light Grey Mixed	80%	20%	52-55
2/20 Light Grey Mixed	90%	10%	57½-60
2/20 Light Grey All Wool			62½
2/20 Colored All Wool			60
2/20 Bleached	80%	20%	62½-65
2/20 Bleached	90%	10%	67½-70
2/20 Bleached All Wool			70-72½
2/23 Colored All Wool			62½-65

2/23 Bleached 90/10	67½-70
2/23 Bleached All Wool	72½-75
2/25 Light Grey Mixed All Wool	80-82½
2/25 Bleached All Wool	85-87½

THE RAG AND SHODDY MARKET

The market for rags and shoddy has showed no change since our last report. Buyers have given orders to cover only immediate requirements. Prices, while showing but slight changes, have shown a tendency toward lower levels except for lots of desirable grades. Stocks of rags are large and the export trade is quiet. Under these conditions there is but little prospect of an advance in prices. The change in the wool tariff, bringing with it a revision of values of both wool and wool substitutes, has been another depressing factor. Dealers do not expect any material change in conditions in any event until after the first of the year when the mills will have a better chance to judge of their requirements in the way of raw material. Wool wastes are dull, dealers finding it impossible to move any considerable quantity of stock. Believing that lower prices would not result in increased business, the holders of stock have maintained quotations which are purely nominal. Cotton waste has been lower with little business in evidence.

We quote as follows:

SHODDIES AND EXTRACTS

White yarn, best all wool	46-49
White knit, all wool, best fine	30-40
White, knit, No. 2	23-30
Light yarn, extra fine	35-36
New pure indigo blue	24-27
Merino	
Fine light, all wool	21-23
Medium light, all wool	19½
Fine black, all wool	17½-19½
Fine dark, all wool, best grade	18-20
Medium dark, all wool, No. 2	14-16
Red knit stock, strictly all wool	21-25
Red flannel, all wool	19-22
Dark blue for hosiery, strictly all wool, No. 1	20-23
Dark blue for hosiery, not all wool, No. 2	13-15

NEW WOOLEN RAGS

Fine merchant tailors	6½-8½
Choice light colors	7-8½
Browns	12½
Blacks	6
Blues	10
Fine dark	7-12
Medium dark	4-5
Serges	
Black	10
Blue	10-11
Flannels	
Very light	17½-18½
Mixed	10-11
Black	7-8

SOFTS AND KNIT STOCK

Soft woolens, best	5-6½
Old white flannels	11-14
Old red flannels	10-11
Old blue flannels	3-5½
Old plaids	4½
White stockings	20-24½
Clear dark hoods	7-8
Light hood stock	13-14

Rhode Island, Woonsocket. The Paragon Worsted Company of Providence is starting up the plant on South Main St., Woonsocket, which it operated up to about two years ago, previous to purchasing the Earnscliffe plant in Providence and moving the business there. The local mill property is leased from Sayles & Prendergast and is located at the Globe Bridge on South Main St. The equipment consists of 26 looms which are to be operated as an annex of the main plant at Providence. Joseph Tellier is in charge.

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THE SILK MARKET

At this writing the silk market is quiet and prices are weak with a strong undertone. Yokohama is reported to have only twelve thousand bales of silk on hand, and it is quite probable that a firmer market will soon be in evidence.

Manufacturers are not buying much of the raw product. This is partly owing to the threatened strike of the broad silk and ribbon weavers at Paterson for a nine-hour day. It is not thought that the manufacturers will accede to these demands, so that the situation is anything but bright.

Up to this time the silk manufacturers have all been busy and running nearly full and business in the silk industry looked very rosy. Now, with a long strike threatened, they are not as optimistic as they were.

The consumption of the raw product has been very large both in this country and in Europe. This is another factor which may cause an advance in prices in a short time.

The Milan market is not so strong as some time ago. This is probably caused by the lower prices quoted in the other silk centers of Europe. While the Lyons market remains firm, no one can predict when another advance will take place, as the manufacturers are busy on spring novelties.

In this country there seems to be an unusual demand for the finished product. In the dry goods section, all report a good business in silks and silk mixed goods. If the manufacturers are able to turn out their product there is no doubt good spring business will develop.

The call for satins, plaids, crepe meteors and pattern meteors is very good. The latter is a new soft finished silk poplin with a distinct pattern. So far, this is reported as selling well and destined to become very popular. Velvets remain a favorite, while foulards will be much used again the coming spring. Broad ribbons are having a big demand, especially in taffeta, and a great many are being made for the hat manufacturers. This is also true of velvet ribbons.

If the labor troubles are settled there seems to be no good reason why the silk industry should not have a very busy season.

Below are prices current:

European

Grand Extra Classical Piedmont 12/14	4.95-4.97½
Extra Classical Italian 12/14 12/16	4.65-4.67½
Classical Italian 13/15 24/26	4.50-4.52½
Best No. 1 Italian 13/15 24/26	4.55-4.57½

60 days' basis.

Japan

Filature Kansai Extra Extra 13/15	4.10-4.15
Filature Kansai Extra 13/15	3.90-3.95
Filature Shinshu Extra 13/15	3.95-3.97½
Filature Kansai Best No. 1 13/15	3.80-3.82½
Filature Kansai No. 1 13/15	3.75-3.77½
Filature Shinshu No. 13/15	3.65-3.70
Rereels No. 1 13/16	3.80-3.85

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Rereels No. 1 1/2 13/16 ..... 3.75-3.80
Rereels No. 1 1/2-2 ..... 3.75-3.77½
6 months' basis.

China

Canton XXA 14/16 ..... 3.55-3.57½
Canton XXB 14/16 ..... 3.45-3.47½
Tstalee Blue Dragon and Flying Horse 3.35-3.40
Tstalee Kun Kee Mars No. 1 ..... 3.00-3.05
Tussah Filature Eight Cocoon No. 1-2 1.57½-1.62½
6 months' basis.

SPUN SILK

As will be noted by our quotations, the spun silk market has advanced twenty cents (20c.) a pound since our last quotation on all numbers. Nevertheless, there seems to be no let up of orders in this industry and the spun silk manufacturers report a good business for the future. The prices follow:

60/2 ..... 3.70
50/2 ..... 3.60
40/2 ..... 3.50
30/2 ..... 3.35
20/2 ..... 3.25
10/2 ..... 3.15

ARTIFICIAL SILK

There seems to be but little difference as to the demand for artificial silk and manufacturers of this product report business very good in this line. No great changes as to prices can be noted and it is quite likely that the market will remain firm for some time to come. Below are prices current:

150 Deniers First Quality European 1.95
150 Deniers Second Quality European 1.85
150 Deniers English A.—Bleached 1.95
150 Deniers English B.—Bleached 1.83
150 Deniers English C.—Bleached 1.70
150 Deniers Elberfeld Raw 1.73
150 Deniers Chardonette Natural 1.85

MILL NEWS

*New York, Gloversville. Some time ago the incorporation of the Normandie Silk Mills was noted with authorized capital stock of $25,000. This concern has established a small plant at 5 Cayadutta St. and is manufacturing glove silk cloth for gloves, underwear and skirts. The equipment includes 80 spindles, 4 looms, electric motors, etc. George Rowland is president; Thomas Hubbard, treasurer, and L. E. Winnie, superintendent and buyer.

Pennsylvania, Philadelphia. The new ribbon mill to be started up in this city by the Manhattan Silk Co., of New York, which has a plant already in operation on Long Island, will be known as the Penn Ribbon Mills and will contain 60 looms, which are now being installed in the Long Bros. Bldg., at 3rd and Ontario Sts.

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SILK MILL NEWS

New Jersey, Sussex. Frost & Van Riper, Inc., silk throwsters, whose main plant is at Paterson, have started a branch in Sussex.

New Jersey, Paterson. Graeffelstein & Rosenthal is the name of the new concern which is equipping a broad silk weaving plant in the Pope Mill. They have purchased 41 broad silk looms from the Jefferson Silk Mills at West New York and will increase this number by the addition of 18 more looms at an early date.

New York, Brooklyn. The Venus Silk Glove Mfg. Co., whose main plant is at Bangor, Pa., have leased the entire building at Franklin, Hayward and Wallabout Sts., and are installing looms for making silk glove fabrics. Three machines are already in place and five more will be installed shortly.

New Jersey, Midland Park. A broad silk weaving plant is being established here by George and James Schofield of Paterson.

New Jersey, Paterson. A new broad silk manufacturing concern is starting up at 60 Ryle Ave. with 50 looms, under the name of Shawin & Barbour.

New Jersey, Paterson. Part of the first floor of the Ryewaner Mill has been taken by a new ribbon concern in which Mr. Seifert, formerly of 130 Broadway, is interested. Mr. Seifert has also been interested in a tubular tie plant at Washington and Fair Sts., which he recently sold to William Romaine, who is now running the plant.

*Pennsylvania, Quakertown. Several weeks ago the organization of the Converters' Silk Mills, Inc. was noted and it was reported that quarters had been rented in Quakertown. This concern is located on Front St. and has begun operations, throwing and quilling silk. When fully equipped the plant will have 4,000 spindles. The capital stock is $15,000. I. Neuburger is president; H. M. Lasker, treasurer, and L. Mueller, superintendent. The buying is done at the New York office, 45 Leonard St.

*Pennsylvania, Sellinsgrove. William F. Groce will install 600 spindles in the building which he recently purchased and will make a specialty of throwing 2, 3, 4, 5 and 6-thread tram silk. Steam power will be used. Mr. Groce has been superintendent of the Littletown Silk Co. at Littletown, Pa. He expects to begin operations in the new plant on December 12.

*Pennsylvania, Tamaqua. Arrangements have been made for building the projected silk throwing mill and operations will be started about the middle of January with 5,000 spindles. H. O. Jones, whose plant at Slatington, which he operated under the name of the Slatington Silk Company, was burned some time ago, is president, superintendent and buyer. M. E. Jones is treasurer. A business of commission throwing of tram and crepe will be carried on and electric power will be used. A new corporation will be formed with capital stock of $10,000 and this will later be increased to $15,000.

SILK MILL NEWS

Pennsylvania, Watsontown. Construction work has been started on the mill for the new Watsontown Throwing Company and the plant will be equipped ready to begin manufacturing by January 25. Seventy-five to one hundred hands will be employed. The product will be taken by F. Q. Hartman, Inc., of Danville. A. D. Baldwin of Watsontown will be superintendent and buyer. The new company is controlled by L. Jauvaud, J. F. Lavigne and F. Ducondray, 354 Fourth Ave., New York.

*Rhode Island, Phenix. William Stoppard will have the building which he is remodeling for use as a silk mill ready for equipment in two or three weeks. He will begin manufacturing about January 1 and it is understood the product will be silk lace shawls. Electric power will be used. Mr. Stoppard will carry on the business under the style of William Stoppard & Company.

*Virginia, Culpepper. The Culpepper Silk Mills, recently organized with capital stock of $50,000 to take over the plant of the Rigby Silk Co. of Paterson and move the plant to Culpepper, proposes to increase the equipment to 80 looms for weaving broad silks. James Rigby, Jr., is president and A. L. Goodloe is treasurer.

*Maryland, Hagerstown. The contract has been awarded by Cromer Bros., manufacturers of silk ribbons asd silk throwsters, for the 3-story addition which it was recently noted was planned. The enlargement is primarily to increase the dyeing facilities.

*New Jersey, Paterson. An order for 20 additional new looms has been placed by Platt Bros., broad silk manufacturers, located at 93 River St. for several years. This concern needs more floor space and is looking for larger quarters, as noted in a previous report.

*New Jersey, Paterson. Fifty-six new looms and thirty-six wide looms that are nearly new have been purchased by the Phoenix Silk Mfg. Co. to replace old equipment. Three hundred and fifty looms are operated in the Paterson plant of this concern. The main office is at 334 Fourth Ave., New York.

New Jersey, Paterson. A. Brawer & Co., silk waste dealers, have purchased the Piaget Mill on Godwin St., and will move their plant from 117 River St. to the new quarters at an early date.

*New Jersey. Paterson. E. & Z. Van Raalte, manufacturers of veilings, nettings and chiffons, have awarded the contract to Oswin W. Shelley for the foundation for the new 4-story mill, 61 by 154 feet, to be built as an extension of their manufacturing facilities.

New Jersey, Paterson. H. Miedendorf has moved his plant to the second floor of the Pope Mill. This plant was located in the Piaget Mill, 49 Godwin St., for about nine years. The new quarters are larger than the old space occupied, but no increase in machinery will be made now. It is expected that about 10 looms will be added later on.

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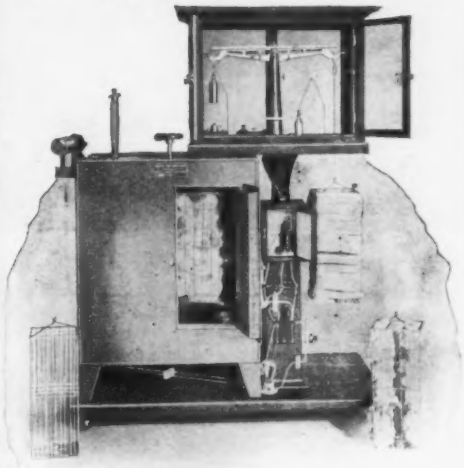

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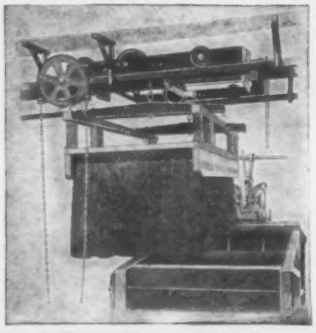

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Citric, domestic	39
Copperas	65-80
Oxalic	8-9½
Sulphuric, 60°, 100 lbs.	1.00-1.25
Muriatic, 18°	1.15-1.65
Tartaric crystals	30-33½

Miscellaneous Chemicals and Dyestuffs

Acetate of lime, gray, 100 lbs.	2.50-2.60
Alum, lump	1.75-1.90
ground	1.85-2.00
powdered	3.00-3.15
Aqua ammonia, 26°	2-6½
Borax	3-5
Cream tartar, crystals	23½-25
Fuller's earth, powdered, ton	18-20½
Glauber's salt	75-85
Potash, chlorate, crystals	8-9
powdered	9-14½
carbonate	3-6
Soda, bicarbonate	1.15-1.50
Soda, caustic, domestic, 60 per cent.	1.80-1.91
Sal., American	65½-85¼
Vitriol, blue	4.76-5.00
Acetate of soda	4-6
Acid, picric, best crystals	70-75
tannic, commercial	36-37
Albumen, egg	42-65
blood	22
Aniline, Oil	10
salt crystals	8½-9½
Alizarine	15-16
Bichromate of potash, American	7-9
Bichromate of soda	4-7
Bisulphite of soda	75-1.25
Cutch, bales	5½-8½
Dextrine, imported potato	4-7½
Divi-divi, ton	33-47

FIRES.

New York, Little Falls. Reports of the recent fire in the plant of the Rex Knitting Company are exaggerated. The fire was confined to the card room and the loss is not over $300. No time was lost.

New York, New York City. Dorfman Bros., manufacturers of knitted neckwear on 25 knitting machines at 55-57 W. Third St., have suffered a loss by fire which is estimated at about $7,000. They carry insurance which will fully cover the loss.

North Carolina, Lumberton. The waste house with contents of the Jennings Cotton Mill Company has been destroyed by fire with loss estimated at $3,000; fully covered by insurance.

North Carolina, Newton. Fire in the picker room of the Clyde Cotton Mills Company caused damage to machinery and stock.

Pennsylvania, Philadelphia. A fire which started during the noon hour in the plant of the Melrose Spinning Mills, located in a portion of the tenement mill at the corner of Howard and Berks Sts., not only damaged the Melrose plant but the plant of Howard-Bunkin Spinning Co. as well.

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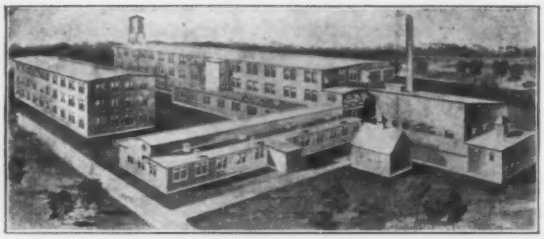

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MILL NEWS

*Rhode Island, Nasonville. William P. Nichols has resigned as superintendent of the Stillwater Worsted Company at Harrisville to take charge of the Nasonville Woolen Mill which is to be started up by a new company as suggested in a previous report. Earl Kimball, of Medway, Herman and Richard Waterhouse and Mr. Nichols are the men who head the new concern. The report that an addition is to be built to the mill to change it from a 42-loom woolen mill to a 200-loom worsted weaving mill seems to be correct. Mr. Nichols will come here in December, and will start the work of putting the Nasonville Mill in condition at once.

New Jersey, Paterson. Smith & Baker, located at 5 and 7 Mulberry St., will add six broad looms to their present equipment, making a total equipment of 22 looms.

New Jersey, Paterson. About December 15 the Standard Broad Silk Works will move from the Addy Mill to the Rheinhart Mill and make some increase in the equipment.

New Jersey, Paterson. The Tarr Silk Company, Marks & Rosenblum, proprietors, will move to the Addy Mill, 60 Ryle Ave., about January 1, and will add a few looms then and make a further increase later.

*New York, Binghamton. Additions to the equipment of the Ballard Silk Company, Inc., to be made on the completion of the addition now under construction, include three 60-spindle winders and two 72-inch warpers.

*New York, Whitestone. The new mill being erected here by Jacob Sulzbach, 70 Wooster St., New York, and associates, is nearing completion. The New York Watering Company and the Atlas Silk Company, New York, will move into the building. The Atlas Silk Company will transfer its machinery from New York to Whitestone as soon as the superintendent, Fred Wasserman, recovers from his recent accident on the Long Island R. R. Mr. Wasserman had both legs broken besides many scalp wounds.

Pennsylvania, Allentown. Kaltenbach & Stephens, manufacturers of narrow ribbons on 450 looms at East Allentown, are erecting a brick machine shop.

*Pennsylvania, Olyphant. The addition to the plant of D. G. Dery will be 125 by 60 ft., 2 stories high. Construction work has been started.

*Pennsylvania, Philadelphia. Frank J. Minett, who has been operating a plant in Wissinoming, a suburb of this city, has removed his equipment to larger quarters in the tenement mill at Mascher and Turner Sts. He winds and warps silk on commission.

New Jersey, Paterson. It is reported in New York that Dwight Ashley, Jr., and his brother Charles Ashley will operate the Hawthorne Silk Mill at Hawthorne, N. J., as the Hawthorne Silk Company. There were no bids for the Hawthorne property at the recent sale of the Ashley & Bailey plant. In the past three weeks much new machinery has been installed and a number of looms from the Paterson plants have been transferred.

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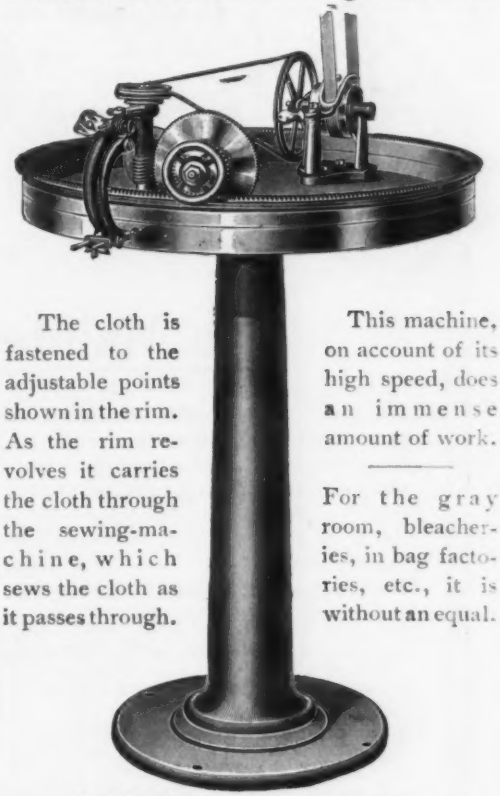

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The roofing contractor states that the expense for maintenance of this entire roof area has been less than $10 and estimates that if metal or ready-made roofings had been used it would have been impossible to keep the buildings free from leaks, and that the painting bill alone up to date would probably have amounted to at least $50,000.

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MILL STOCKS

FALL RIVER MILLS

	Par Value.	Bid.	Asked.
American Linen Co.	100	...	75
Arkwright Mills	100	...	70
Barnard Mfg. Co.	100	...	...
Bourne Mills	100	...	110
Border City Mfg. Co.	100	98	...
Chace Mills	100	102	...
Charlton Mills	100	80	...
Cornell Mills	100	...	150
Davol Mills	100	85	...
Davis Mills	100	...	87½
Flint Mills	100	95	97
Granite Mills	100	...	...
Hargrave Mills	100	48	...
King Philip Mills	100	110	113½
Laurel Lake Mills	100	...	125
Lincoln Mfg. Co.	100	...	90
Luther Mfg. Co.	100	...	...
Merchants' Mfg. Co.	100	...	90
Mechanics' Mills	100	89	...
Narragansett Mills	100	105	...
Osborn Mills	100	102½	...
Parker Mills	100	...	55
Pocasset Mfg. Co.	100	...	100
R. Borden Mfg. Co.	100	117	120
Sagamore Mfg. Co.	100	170	...
Seaconnet Mills	100	...	63
Shove Mills	100	...	75
Stafford Mills	100	80	82
Stevens Mfg. Co.	100	117	120
Tecumseh Mills	100	...	105
Troy C. & W. Mfg.	500	...	...
Union Cot. Mfg. Co.	100	165	...
Wampanoag Mills	100	...	85
Weetamoe Mills	100	...	87

OTHER NEW ENGLAND MILLS

	Par Value.	Last Sale.
Amoskeag Mfg. Co., com., N. H.	100	60
Amoskeag Mfg. Co., pfd., N. H.	100	97
Androscoggin Mills, Me.	100	135¼
Arlington Mills, Mass.	100	82
Appleton Co., Mass.	100	172
Atlantic Cotton Mills, Mass.	100	40½
Bates Carpet Co., Me.	100	252½
Bigelow Carpet Co., Me.	100	150½
Boott Mills	100	98⅛
Boston Duck Co., Mass.	700	1350
Boston Mfg. Co., Mass.	100	105¼
Cabot Mfg. Co., Me.	100	120
Chicopee Mfg. Co., Mass.	100	90
Continental Mills, Me.	100	75
Dwight Mfg. Co., Me.	500	1002½
Edwards Mfg. Co.	100	99
Essex Co., Mass.	100	190
Everett Mills, Mass.	100	110
Fisher Mfg. Co., Mass.	100	125⅛
Franklin Co., Me.	100	205
Great Falls Mfg. Co., N. H.	100	181¾
Hamilton Woolen Co., Mass.	100	95
Hamilton Mfg. Co., Mass.	100	81¼
Hill Mfg. Co., Me.	100	90¼
Jackson Co., N. H.	1000	985
Lancaster Mills, Mass.	100	85
Lawrence Mfg. Co., Mass.	100	150¼
Lockwood Co., Me.	100	103⅜
Lowell Bleachery, Mass.	100	129
Lowell Hosiery, Mass.	100	40
Lyman Mills, Mass.	100	117
Massachusetts Cotton Mills, Ga.	100	93¾
Massachusetts Cot. Mills, Mass.	100	110⅛
Merrimack Mfg. Co., com., Mass.	100	27
Merrimack Mfg. Co., pfd., Mass.	100	85
Middlesex Co., Mass.	100	58½
Monadnock Mills, N. H.	1000	1000
Nashua Mfg. Co., N. H.	500	550
Naumkeag Steam Cot. Co., Mass.	100	135
Newmarket Mfg. Co., N. H.	100	95
Otis Mfg. Co., Mass.	1000	1852½
Pacific Mills, Mass.	100	108
Pepperell Mfg. Co., N. H.	100	293
Plymouth Cordage Co., Mass.	100	215
Salmon Falls Mfg. Co., N. H.	300	150
Shaw Stocking Co., Mass.	100	75
Suncook Mills, N. H.	100	20
Thorndyke Mfg. Co., Mass.	1000	1750
Tremont & Suffolk Mills, Mass.	100	99
Waltham Bleachery & Dye Works, Mass.	100	129
York Mfg. Co., Me.	100	85⅛

NEW BEDFORD MILLS

	Bid.	Asked.
Acushnet Mill	135	...
Beacon Mfg. Co., com.	102½	...
Beacon Mfg. Co., pfd.	...	116
Booth Mfg. Co., com.	52½	...
Booth Mfg. Co., pfd.	...	60
Bristol Mfg. Co.	65	...
Butler Mfg. Co.	...	90
City Mfg. Co.	...	90
Dartmouth Mfg. Co., com.	210	...
Dartmouth Mfg. Co., pfd.	99½	...
Gosnold Mfg. Co., pfd.	87	...
Grinnell Mfg. Co.	167½	...
Holmes Mfg. Co., com.	92½	...
Holmes Mfg. Co., pfd.	98	...
Kilburn	110	120
Manomet	111	113
Nashawena Mills	...	63
N. B. Cotton Mills Co., com.	100	...
N. B. Cotton Mills Co., pfd.	...	100
Neild Mfg. Co.	90½	...
Nonquitt Spinning Co.	...	87
Page Mill	...	77½
Pierce Mill	300	...
Potomska Mills	112½	...
Quissett Mills	92½	95
Quissett Mills, pfd.	...	100
Sharp Mfg. Co., com.	...	83
Sharp Mfg. Co., pfd.	100	103½
Soule	...	82½
Taber Mill	...	100
Wamsutta Mills	120	...
Whitman Mills	...	*121

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SOUTHERN MILLS

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Abbeville	85	100
American Spinning Co.	155	...
American Spinning Co., pfd.	100	...
Arkwright Mills	...	100

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Cabarrus	150	...
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Chadwick-Hoskins, pfd.	...	101
Chiquola Cotton Mills, pfd.	80	...
Clifton, com.	80	...
Clifton, pfd.	96	100
Clara	100	...
Cliffside	190	...
Clinton	...	120
Columbus Manufacturing Co.	...	85
Darlington	75	83½
Drayton	...	90
Erwin, pfd.	105	...
Easley	...	185
Exposition	...	210
Florence	125	128
Gaffney Manufacturing Co.	59	...
Gluck	...	100
Graniteville, S. C.	140	152
Grendle	...	96
Glenwood	...	150
Highland Park	186	...
Highland Park, pfd.	...	102
Hartsville	175	195
Hartsville, pfd.	...	100
Henrietta Mills	...	141
Inman, com.	...	108
Inman, pfd.	...	100
J. P. King Manufacturing Co.	...	79
Kesler	150	165
Lancaster Cotton Mills	130	...
Lancaster Cotton Mills, pfd.	96	...
Lanet	...	112
Laurens	127	136
Lockhart, S. C.	...	72½
Loray Mills, pfd.	...	96
Modena	...	100
Mollohon	...	101
Monarch, S. C.	115	...
Newberry	125	...
Norris Mills	...	121
Ninety-Six	130	140
Orr	86	...
Ozark	100	...
Parker Mills, com.	15	20
Parker Mills, pfd.	44	60
Parker Mills, guar.	85	100
Pacolet Mfg. Co., com.	...	103
Pacolet Mfg. Co., pfd.	100	...
Patterson	129	...
Pelzer Manufacturing Co.	125	164
Piedmont Manufacturing Co.	150	167
Pell City, Ala.	...	80
Poe, W. F., Manufacturing Co.	100	...
Riverside Manufacturing Co.	...	78
Roanoke Mills	...	155
Saxon	114	...
Spartan	107	...
Toxaway	...	78
Union Buffalo, 1st pfd.	34	51
Union Buffalo, 2d pfd.	...	10
Warren Mfg. Co., com.	78	...
Warren Mfg. Co., pfd.	...	107
Washington Mills	...	20
Washington Mills, pfd.	...	100

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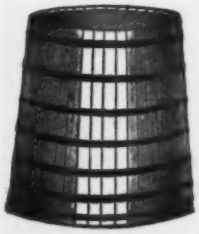

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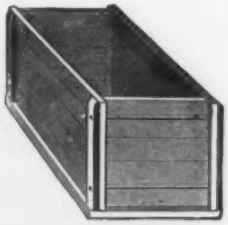

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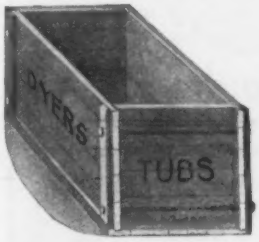

AMOS H. HALL, SON & CO.

Established 1868

Cedar Vats and Tanks

Tubs and Tanks of all kinds for Dyers, Bleachers, Factories, etc.

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Down Town Office, 140 Chestnut St., Corner Second
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BARTLETT-CRAVER WATER SOFTENER AND FILTER

Specially Designed for Textile Purposes

MANUFACTURED BY

WM. CRAVER TANK WORKS ROOKERY BUILDING CHICAGO, ILL.

COPPER Printing Rollers Singe Plates and Sheets

Taunton-New Bedford Copper Co.

New Bedford, Mass.

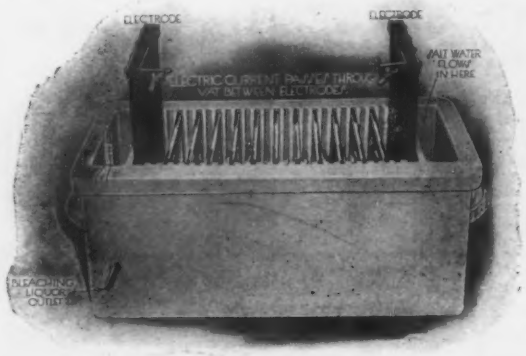
OUR GUARANTEE:
SUPERIOR QUALITY PROMPT SHIPMENTS

WATER SOFTENING OR FILTRATION

FOR BOILER FEED AND ALL INDUSTRIAL USES

WM. B. SCAIFE & SONS CO., PITTSBURGH, PA.

Make Your Bleach out of Salt Water.



The cut represents our passage type Electrolyzer producing in 8 hrs. the equivalent of 50 lbs. of chloride of lime, operating under 110 or 220 DC, and nothing is used but salt-water and electricity. The liquid produced is uniform in strength, and goods bleached are stronger and better in feel and color.

IS NOT AN UNTRIED THING

having many years ago passed the experimental stage. We have sold Electrolyzers to many of the large Knitting Mills, both hosiery and underwear, and so far are not aware of any purchaser not being thoroughly satisfied. There is absolutely no question about its merits.

Write, giving amount of lime used daily, current available, with costs.

We make machines of special construction for any purpose.

The National Laundry Machinery Co. Dayton, O., U. S. A.

Wrisley's Soaps

For All Textile Purposes

All of our Textile Soaps are scientifically compounded of best possible selected ingredients. They are

GUARANTEED ABSOLUTELY PURE AND PRICES RIGHT

and every lot thoroughly tested before leaving our plant. Write for samples and prices, stating kind desired.

ALLEN B. WRISLEY CO.

Textile Dept.
Chicago, Ill., U.S.A.

TANKS

Built Right

Norwood Norwood

Mechanical Filters

GRAVITY AND PRESSURE TYPES

Cleanse Water—Save Losses—Promote Business Success

Norwood Filters are sold with a Guarantee which can be given because every one is built to suit location and condition.

We don't sell you any old filter but investigate first.
Then we build a filter to suit your requirements.

Write For Our Experts

Norwood Engineering Co.
Florence, Mass.

Expert Advice Free of Cost

WOOD TANKS and VATS

Dye Kettles and Tubs
of any size and shape

MAY WE SEND YOU CATALOG?

NEW ENGLAND TANK AND TOWER CO., 88 Broad Street, BOSTON, MASS.

FILTERS AND WATER SOFTENERS

Hungerford Filters having an aggregate capacity of over ONE HUNDRED MILLION GALLONS per day are now in operation in the textile mills of America

The Filters That Never Require A Renewal of the Filter Bed

HUNGERFORD & TERRY, Inc.
Penna. Bldg., Philadelphia, Pa.

FRIEDBERGER-AARON MFG. CO.

LEADING MANUFACTURERS

Braids and Edgings

FOR TRIMMING

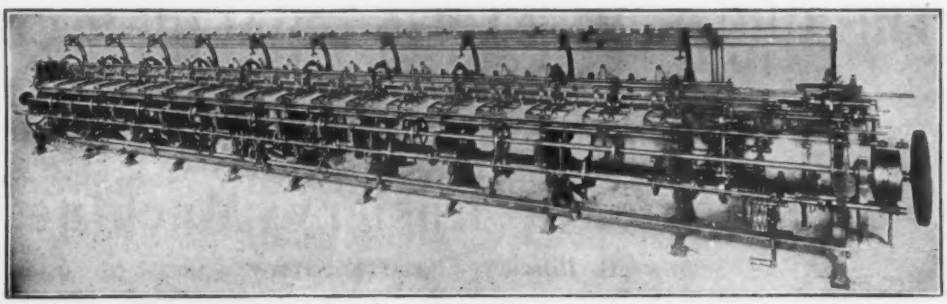
Ladies' Ribbed Underwear

OUR MOTTO:

Correct Goods
Right Prices
Prompt Deliveries

Mills: Wayne Junction, Philadelphia

Post Office Address,
Logan Station, Philadelphia



Full Fashioned Hosiery Machines

MANUFACTURED BY

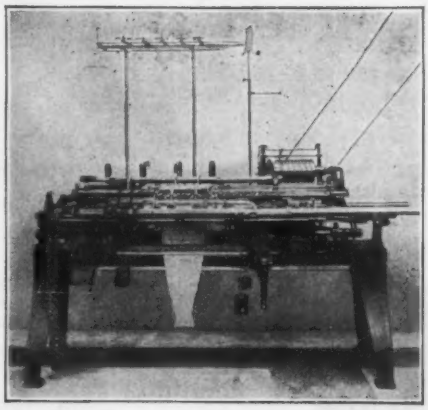
David Richter, Inc., Chemnitz, Saxony

Built in all gauges, any number of sections, and with any attachments desired.
Best constructed, easiest running and most productive machines on the market.
LACE MACHINES, system "Gothrough," **NETTING MACHINES,** system "Double Locker," **LACE CURTAIN MACHINES.**

Dubied Knitting Machines

BUILT BY

Edward Dubied & Co., Couvet, Switzerland



The most perfect knitting machines that skill and experience can produce.

Designed for the highest possible production and the greatest endurance.

Full automatic, semi-automatic and **hand machines,** for **links** and **links,** (pearl stitch) flat and tubular **automatic widening, jacquard, shaker, accordion bias neckties.**

Machines can be seen in operation.

Complete stock of supplies carried in New York. All parts interchangeable.

Kuechenmeister winders, Standard overseamers, whipstitch overseamers with automatic trimming attachment.

Write for our illustrated Book "A"

E. O. SPINDLER, Agent

350 Broadway **Rooms 520-24** **New York, N. Y.**

THE GROSSER KNITTING MACHINE CO.

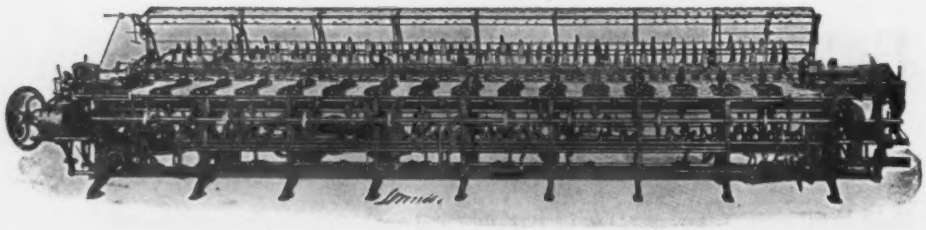
MAX NYDEGGER

Wool Exchange, 260 W. Broadway, New York

ALL SPECIAL MACHINES FOR ANY ARTICLE THAT IS KNIT

Full Fashioned Hosiery Machines

System **G. Hilscher, Chemnitz, Saxony**

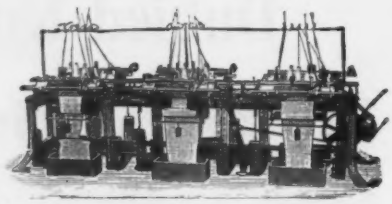


16 Section "COTTON HILSCHER" Machine for Full Fashioned Hosiery, Silk, Cotton, Wool, etc.

Gold Medal, Paris, 1900 — Numerous Patents Covering Special Improvements

GROSSER Flat Knitting Machines

For HAND Power or FULLY AUTOMATIC Power MACHINES. Most productive and best machines for Sweaters, Jackets, Blouses, Wool Hosiery, Gloves, Mittens, Sporting Goods in Plain, Fancy and Jacquard Work, Shaker Articles, etc. Large stock on hand. Power Machines to be seen in operation.



CIRCULAR FRENCH FRAMES

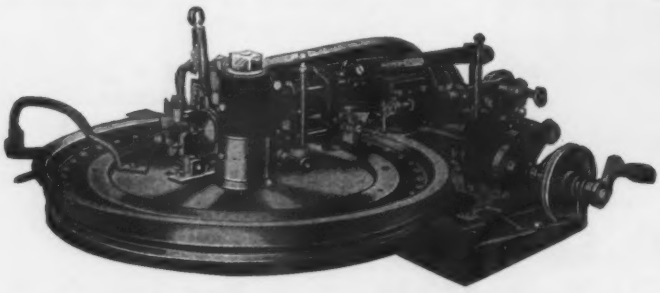
C. Terrot Söhne, Cannstatt, Würt, famous builders of the best Circular Frame for Finest Underwear, Fleece Linings, Gloves, Special á-jour (openwork) Fabrics, etc.

RASHEL MACHINES [Double Rib Warp Knitting Machines.]

For Fancy Goods in largest variety, Shawls, Capes, Caps, Borders, Fringes, Lace Work, etc., in silk, wool, cotton.

THE LOOPER THAT LOOPS!

Two thread lock stitch machine with reliable trimmer and raveller producing *indestructible, flat elastic seam.* No hosiery or underwear plant up to date without this machine.



DIAMOND OVERSEAMERS

for all classes of selvage goods, Full Fashioned Hosiery, Underwear, etc.

FINISHING MACHINES

for Knit Goods of all styles.

WINDERS

for finest yarns.

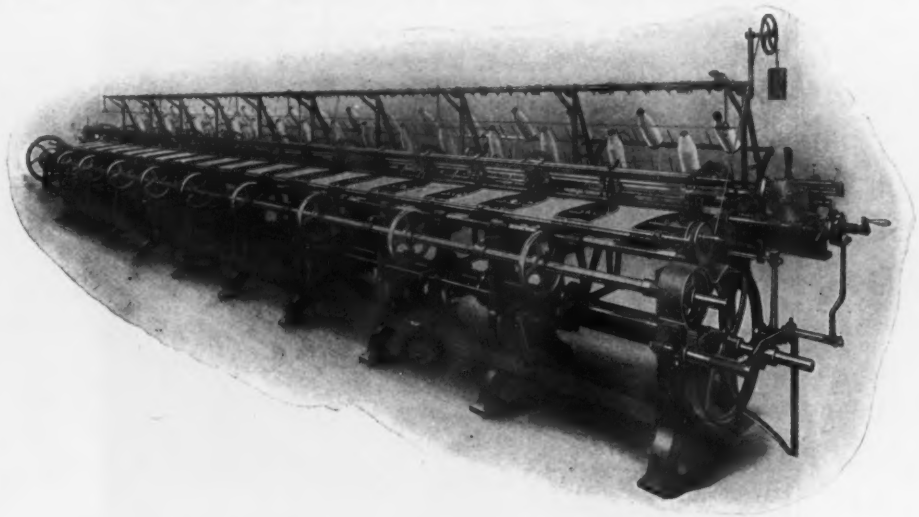
Information, Samples and Specifications at Your Disposition.

Full Fashioned Hosiery Machines

BUILT BY

Schubert & Salzer Maschinenfabrik and Branch Works H. Alban Ludwig, Chemnitz, Germany

Largest Manufacturers of All Classes of Hosiery Machines



Since the acquisition of the Ludwig Plant, Schubert & Salzer have continued the construction of Full Fashioned Hosiery Machines in both systems, the Ludwig with divided narrowing tackle, movable knocking-over bars, etc., and both types with various special features and all the practical attachments known to the trade. Built in all gauges from 14 to 34 needles to the inch, from 12 to 24 sections.

Best Constructed and Most Productive Machines on the Market

REFERENCES:

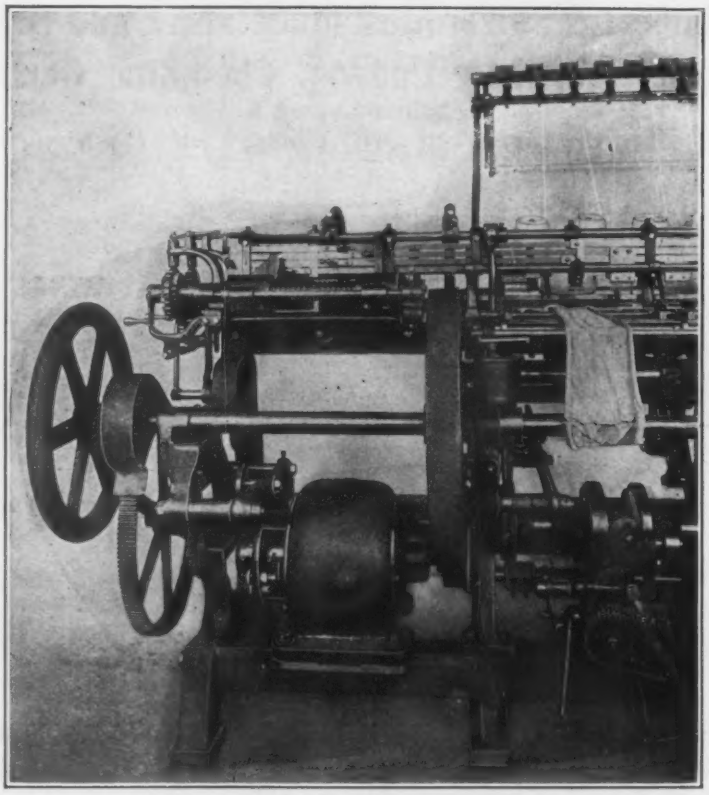
All the leading manufacturers of full-fashioned hosiery in this country.

AMERICAN REPRESENTATIVE:

OTTO WALTHER, 507 Bourse, Philadelphia

American Full Fashioned Hosiery Machines

Are Practically Troubleless Machines



A Hosiery Machine is made up of tens of thousands of parts. Any one of them is liable to break and need replacement any time.

If you use "Reading Made" hosiery machines you avoid trouble. These *American* machines are scientifically proportioned and balanced. Should a break occur you can replace the broken part almost immediately (by wire, phone, or letter) from our stock of duplicate parts.

All parts are interchangeable
Made for belt or motor drive

TEXTILE MACHINE WORKS

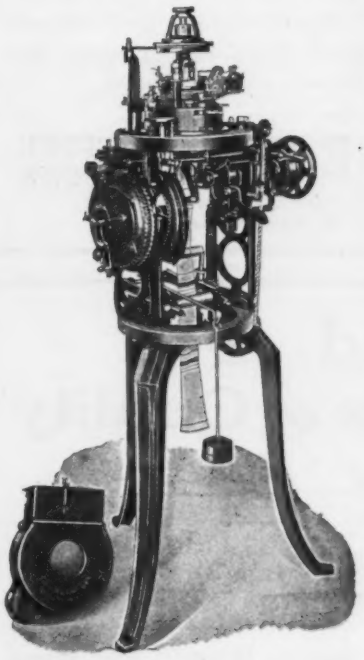
The Makers of

American Full Fashioned Hosiery Machines

READING, PA.

A Still Newer Necktie Machine

For Diagonal Patterns



AMONG our other new features are a body machine with revolving cams, instead of revolving cylinder and dial.

This machine is equipped with the dogless attachment, thus eliminating the many troubles due to the use of dogs with which all other American rib machines have to contend.

In addition there is a new friction drive which facilitates starting the machine from either front or back.

Also an improved yarn guide and latch guard.

Wildman Mfg. Co.

Established 1889

Norristown, Pa.

Trade Mark

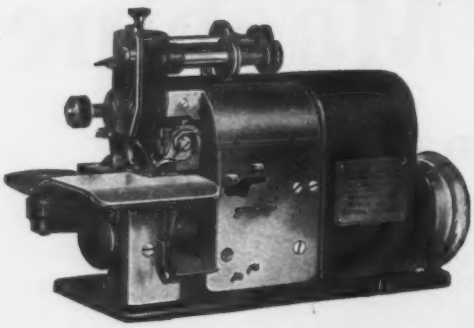
The Merrow

FAST

DURABLE

Light Running

High Speed Overseaming, Overedging and Shell Stitch Machines are



OUR CLASS 60 MACHINES for Trimming and Overseaming in one Operation produce the strongest, best Seams and do it with the greatest economy.

USE STYLE 18 for Horse Blankets. STYLE 17 B or 22 for Bed Blankets. STYLE 35 E SHELL, for Necks and Fronts of Rib Goods, produces the most showy, substantial finish.

Send for Catalogue and Samples.

THE MERROW MACHINE CO. **HARTFORD, CONN.**

Knickerbocker Building, Sixth and Arch Sts., Phila. 467 Broadway, cor. Grand St., N.Y.
815 Van Buren St., Chicago, Ill. 1019 E. Baltimore St., Baltimore, Md.

Imported Knitting Machines of Quality

SPECIALTIES

Karl Lieberknecht, Oberlungwitz, Saxony

FULL FASHIONED MACHINES. "System Cotton" for plain and ribbed Hosiery, Underwear, Gloves and Neckties.

RIB MACHINES, high speed, for Rib Tops, Neckties, Hosiery in plain, striped and accordion effects.

WARP MACHINES (120 courses per minute) for Tricot Fabrics.

Otto Seifert, Burgstaedt, Saxony

WARP MACHINES, for Elastic Hat Bands, Mourning Bands, Shawls and Scarfs.

JACQUARD WARP MACHINES, for Veilings, Laces, Shawls, Insertions, etc.

Louis Hirsch **173-177 Lafayette St., New York City**
Sole Representative in U. S. and Canada

A New "Union Special"

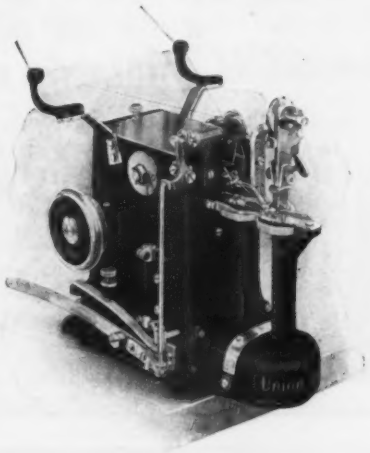
Cup Feed Machine for Seaming Selvage Edge Hosiery

Quiet, Light Running, High Speed

Double Thread Interlock Seam
perfectly flat and non-irritating

Ends of Seams Locked
giving looper finish

Finest Gauge Silk Fabric
To heaviest cotton hose seamed with equal facility



Improved Adjustable Uncurling Device
insuring perfect seam

Both Feeding Cups Actuated
insuring positive feed upon both selvages, avoiding puckered seam

Quickly Adjustable Stitch Regulator
without interchanging parts.

Union Special Machine Company

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SPECIAL STEELS

TEXTILE and KNITTING MACHINE MAKERS

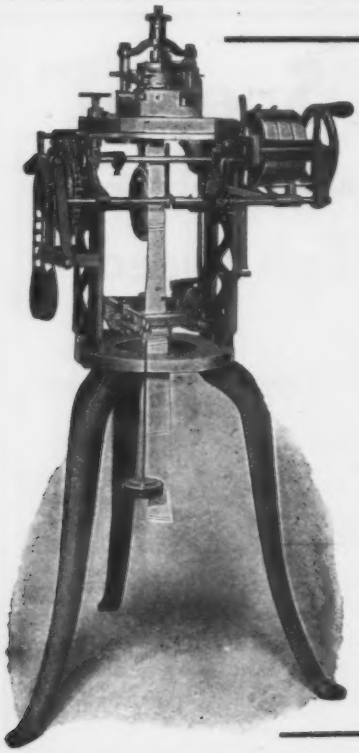
and those who need steel parts for machines will save money by using our line of high-grade steels.

A large and complete stock is kept on hand—always ready for shipment—everything you need in these lines.

Send for catalogue "D" and prices

FIELD & COMPANY, Inc.

116 North 7th Street Philadelphia, Pa.



H. BRINTON COMPANY

213-217 Race Street, Philadelphia, Pa.

BUILDERS OF

Circular Knitting Machinery

of every kind for every purpose

HOSIERY RIBBERS

with Splicing, Striping, Two-speed, Selvage Welt and French Welt Attachments.

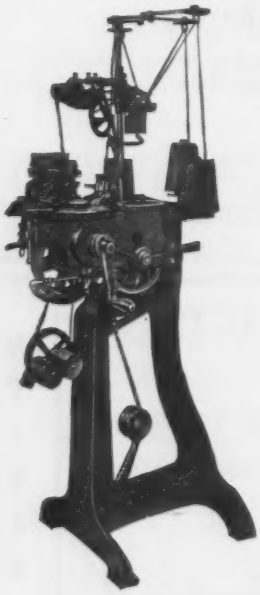
Full Automatic Hosiery Footers

BODY MACHINES, SLEEVERS, etc.

for Underwear, Sweaters, Toques, etc.

NECKTIE MACHINES

for making all kinds of tubular knitted scarfs. Write for catalog, prices and samples.



THE INVINCIBLE

Full Automatic Knitter

The machine that stands for

QUALITY OF PRODUCT

Jenckes Knitting Machine Co.

SUCCESSOR TO
KNITTING MACHINE DEPARTMENT OF
E. JENCKES MFG. CO.

Pawtucket, R. I.

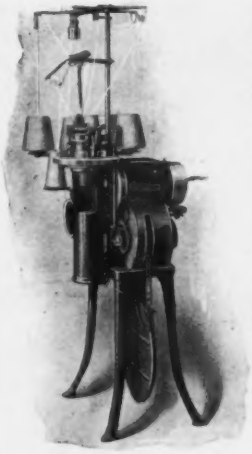
Philadelphia Show Rooms, 1211-1217 Filbert Street

A New System of Machinery for Producing Seamless Hosiery

Scott & Williams Model B

(Incorporated)

Replacing Former Model B



Five Yarn Changes.
Sectional slackening prior to the heavy yarn changes, thereby preventing cutting and waste.
Fabric also slackened where high splicing yarn is inserted, thus insuring narrow ankle and foot.
For transfer work less moves than any other machine on the market.

Scott & Williams Model F

(Incorporated)

The most comprehensive machine ever offered to the trade.
Makes women's hose with integral welt—no sewing necessary.
Or will make women's hose with selvage top, using any kind of yarn from silk to carded cotton.
Makes half hose without a transfer.
All dropped from the machine—looping alone required.
Anti-run-back course preventing ravelling from garter tears and other causes.
This machine may also be used for making string work, or half hose transferred in the old fashioned way.

Philadelphia **SCOTT & WILLIAMS, Inc., 88 Pearl Street, Boston, Mass.** Utica

The Reece Button-Hole Machine

For Cutting and Stitching Straight Double-Barred Buttonholes

This machine is designed for cutting and stitching straight double-barred buttonholes without eyelets, from ⅛ of an inch in length up to 1 inch, in knit goods, shirts, shirtbands, collars, cuffs, etc., also on knit goods of all kinds. It is superior to all other machines, as it is the *only single thread* buttonhole machine on the market doing away with the bobbin or under thread, thereby making a great saving in the use of thread, and *it will produce more than double the quantity of work of any other machine*, thus saving the employment of an extra operator and the space of an extra machine. The quality of the work produced is superior to any other buttonhole, from the fact that the stitch is elastic, which is an important factor in knit goods. This machine is automatic in all its movements, and is an easy machine to handle, and does not require the services of a skilled operator, no cutting or pulling of the thread required, and when the buttonhole comes from the machine, it is finished in every respect and does not require to be trimmed or cut. The length of hole required can be obtained by simply turning a screw.

The machine is made of hardened steel drop forgings, thus reducing the breaking and wearing of parts to a minimum. *Samples of work and terms sent on application.*

THE REECE BUTTON-HOLE MACHINE CO.

Office and Factory - 500 to 514 Harrison Avenue, Boston, Mass.

The "Five-In-One"

A Revolution in Knitting Machine Construction

A brief consideration of the following real features will convince you that this new AUTOMATIC Knitting Machine surpasses others in simplicity, compactness, capacity and production:

1. It has fewer parts than any other machine that will do the same work.
2. It requires less floor space.
3. The frame is all one casting, insuring constant shaft alignment.
4. The vital bearings are fitted with bushings that can be changed at small expense.
5. It has fewer screws than any other Automatic Knitter. Rivetted pins are used in those places where screws usually work loose, thus saving endless trouble.

This gives but 5 of the 25 superior points of the "Five-In-One" A. N. Ames Automatic Knitting Machine. See next month's issue for 5 more points that make for economy. Or better still, write for further details now.

The A. N. Ames Knitting Machine Company
Factory and Main Office, Main St., Franklin, N. H.

THE MOST COMPLETE LINE OF

Sweater Coat Machines

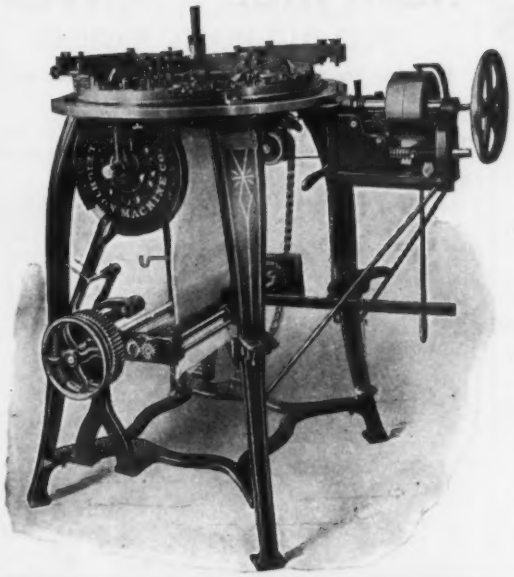
Automatic Racking Machines with or without striping attachments.
Herring Bone Stitch Coat Machines.
Plain Sweater Coat Machines.
Pineapple Stitch Sweater Machines.
Jersey Sweater Machines.
Plain Binding Machines.
Rotary Jacquard Binding Machines.

FOR INFORMATION, ADDRESS

STAFFORD & HOLT,

LITTLE FALLS, · NEW YORK, U. S. A.

Leighton Improved Circular Knitting Machines



FOR SWEATER COATS

Give Good Production and Excellent Quality

IN

Automatic Racked Fancy

OR

Plain Stitches

On Wool, Worsted or Cotton Plated

We also Build Jersey or Ribbed Underwear Machines, 4 to 16 Feeds

Leighton Machine Company

Manchester, N. H.

John W. Hepworth & Company

N. W. Cor. Lehigh Ave. and Mascher St. Philadelphia, Pa.

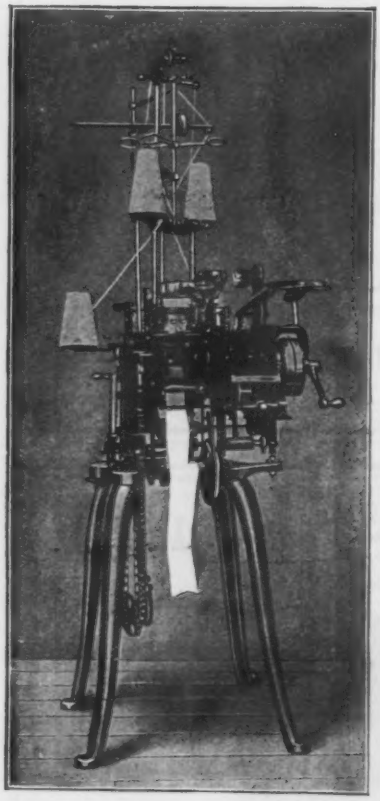
Makers of Two Thread Elastic Lock Stitch Loopers

ALSO ATTACHMENTS for changing our single stitch loopers into the two-thread loopers.

PAXTON & O'NEILL

Full Automatic

Yarn Changers and Platers



Easy Transfer

Accurate Measuring Device

Produce Finest Fabric Made On Any Latch Needle Machine

FOR LADIES or HALF HOSE

Makes Ladies' Hose with Garter Top.
No Ravel;
Silk, Plated, or Mercerized Leg.
High Splice, Double Sole, with Advanced Toe, Linen or Mercerized Heel and Toe.

PAXTON & O'NEILL

537-41 North Third Street, Philadelphia

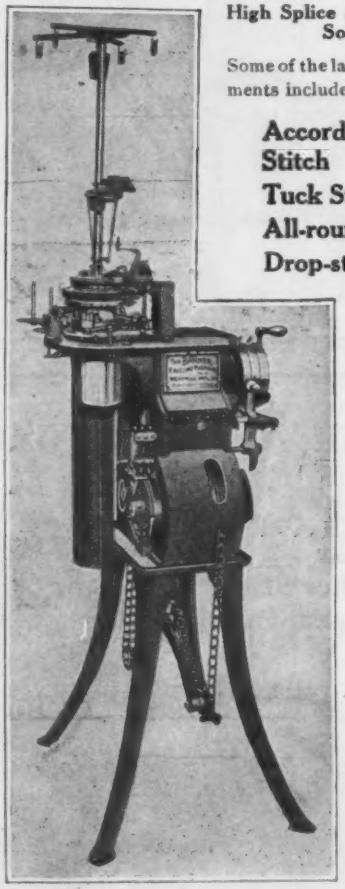
"THE BANNER" HEMPHILL'S LATEST

FULL AUTOMATIC MACHINE

The First Practical Revolving Cylinder Machine on the Market

Built for either plain or split foot work, single or double feed. Adapted to manufacture hose with linen or mercerized heel or toe.

Also for Plaited Goods, Silk and String Work



High Splice and Double Sole

Some of the latest improvements include:

Accordion Stitch
Tuck Stitch
All-round Drop-stitch

These Improvements are fully AUTOMATIC

Largest Production

More Yarn Changes

Highest Speed

Simplest

Least Repairs

Over 2500 sold and delivered the first half of the present year

PRODUCES A SUPERIOR QUALITY OF WORK

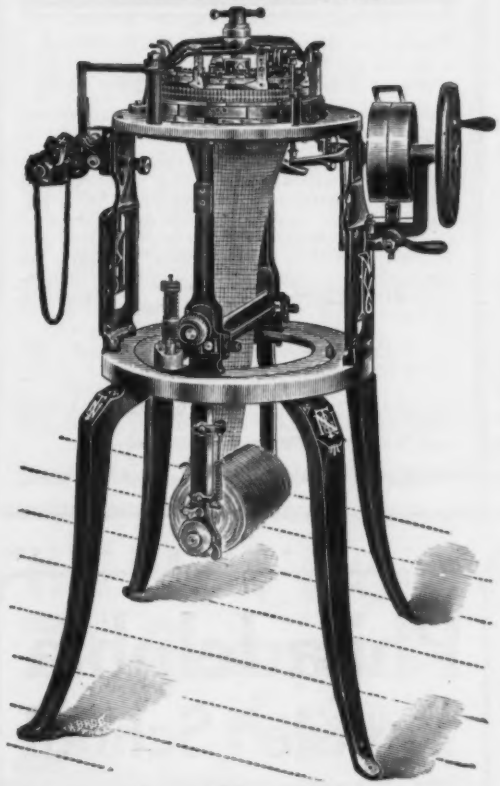
Hemphill Mfg. Co.

131 Clay Street - PAWTUCKET, R. I.

Average Production 100 Machines a Week

NYE & TREDICK CO.

718-720 Cherry Street
PHILADELPHIA, PA.



Circular Rib Knitting MACHINERY

For making Ribbed Underwear, Combination Suits, Sweaters, Cuffs, Shirt Borders, Hosiery, etc. Correct Construction, Excellence and Durability.

LATEST IMPROVEMENTS

Quality of Fabrics and Production UNEXCELLED

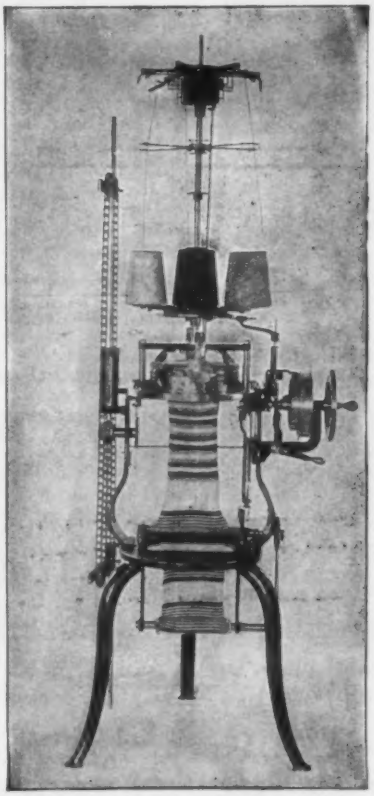
NYE & TREDICK CO.

1913

CRANE MFG. CO.

Established 1870 — LAKEPORT, N. H. — Incorporated 1890

Spring and Latch Needle Machines
for both Rib and Plain Work
Economically Producing
A GREAT VARIETY OF FABRICS



IMPROVED AUTOMATIC 3-COLORED PLAIN STRIPER

Made in sizes from 7⅞" to 14½" inclusive, of any desired gauge; these measurements being back to back of cylinder needles.

The fabrics from this machine are used for bathing suits, theatrical and athletic goods.

These machines are second to none in the market.

The Crawford stop-motion is applied when requested.

SOME CRANE FEATURES.

Patent removable hardened Wing Burr Wheels.
Patent Thread Stop Motion can be fitted to 20 in. and 40 in. frames and are specially adapted for making fine Jersey Cloth and Stockinet.
Our flat machine is adapted for knitting collarettes.

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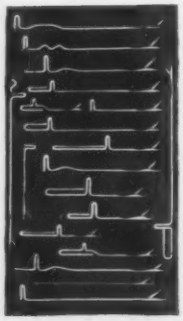

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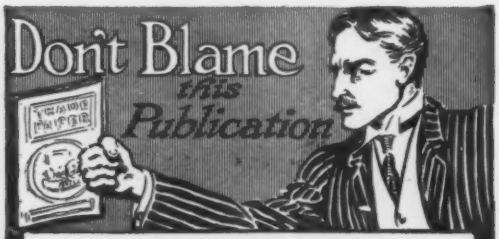

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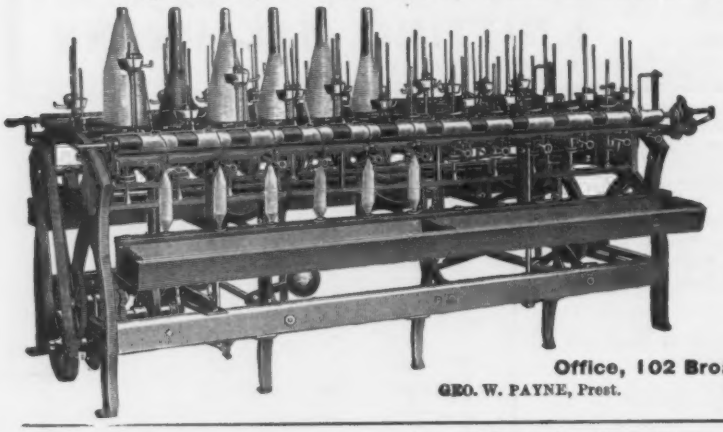

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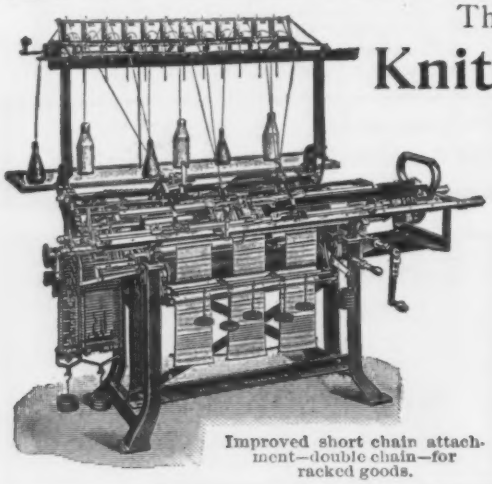

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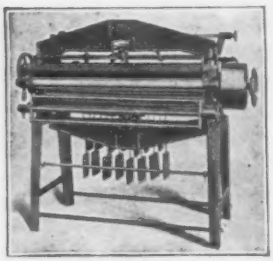

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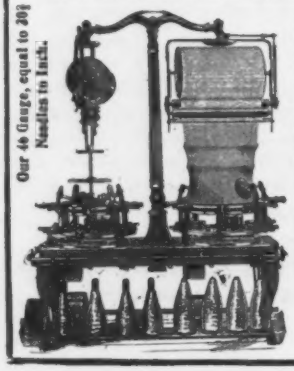

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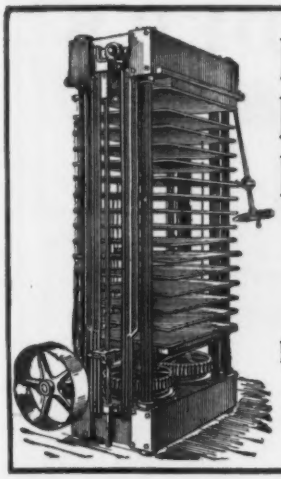

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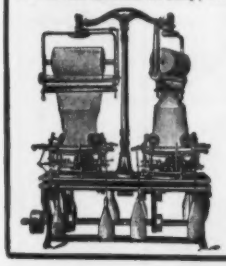

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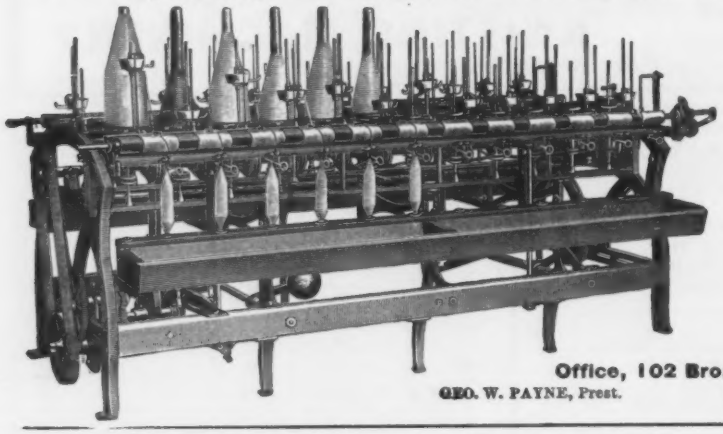

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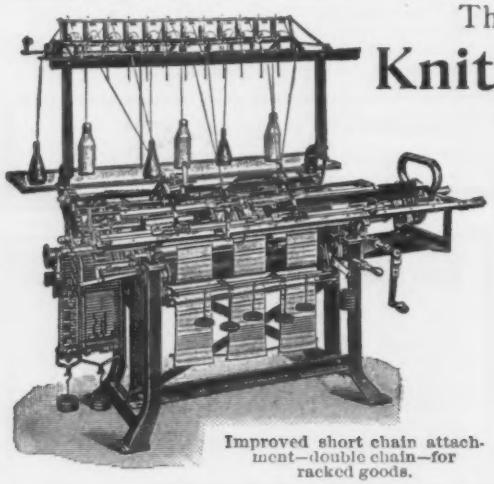

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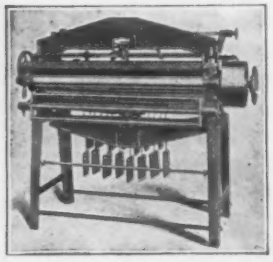

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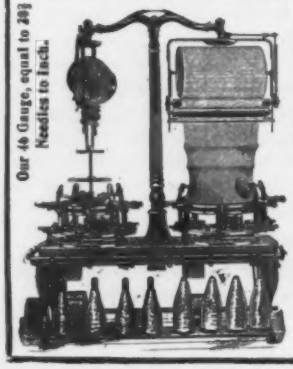

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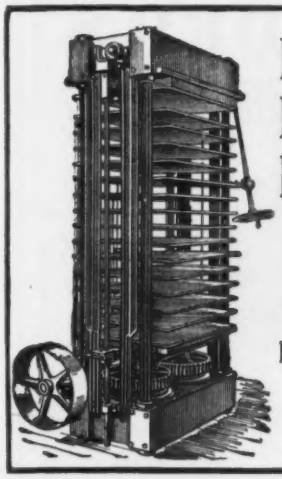

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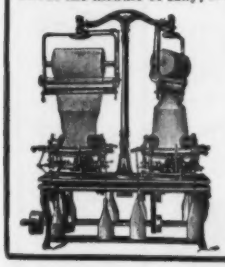

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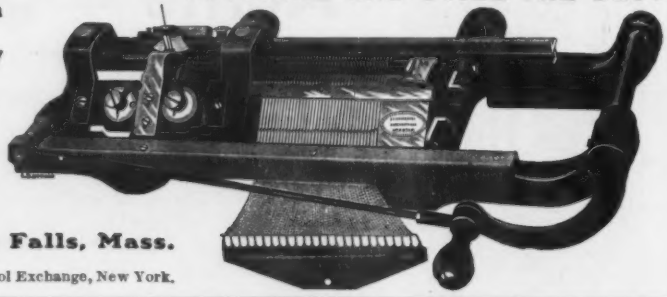

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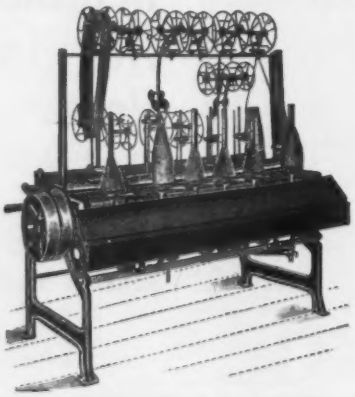

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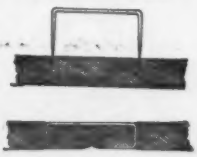
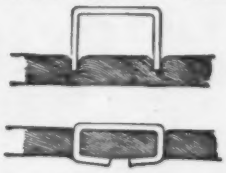


The fine points escape the threads and do not break them. The staple ends lie perfectly flat and smooth and do not stick up to catch on other goods. The stitch is readily picked out with the fingers.

THE STITCH OF OTHER MACHINES USING THE HEAVY WIRE



The coarse heavy wire and the blunt staples break the threads and leave unsightly holes after they are removed and require a knife to extract the stitch.

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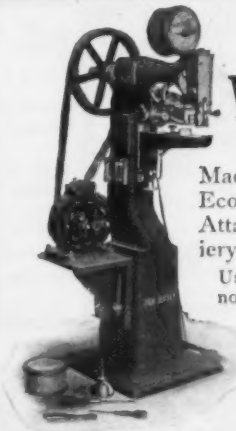

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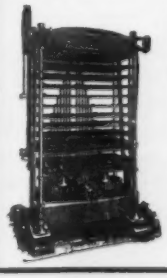

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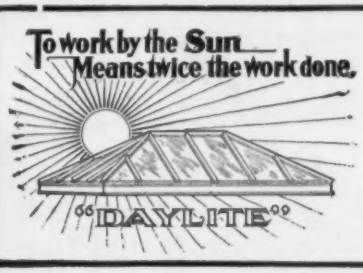

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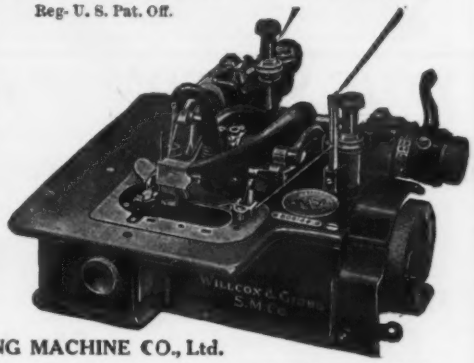

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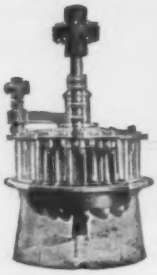

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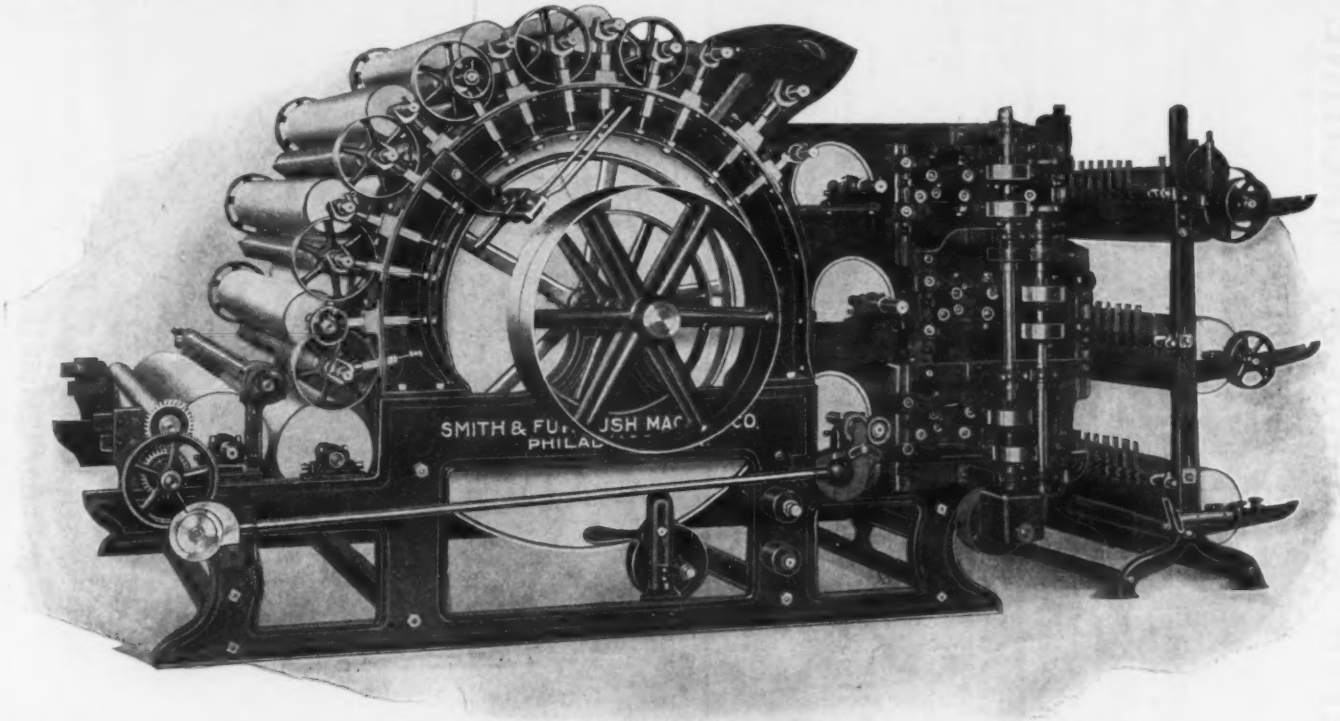

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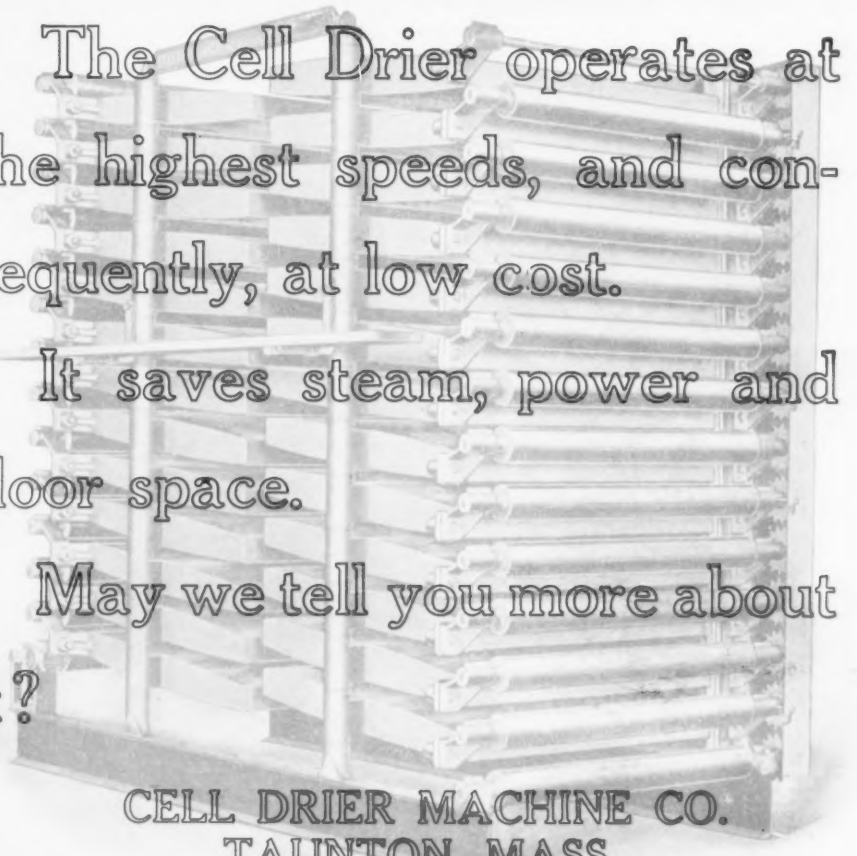

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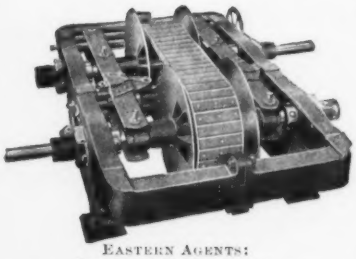

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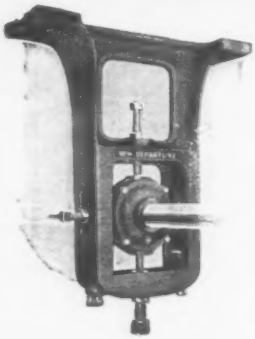

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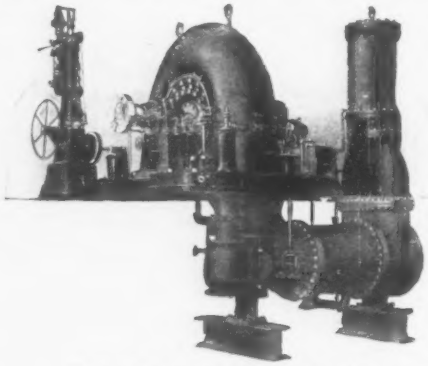

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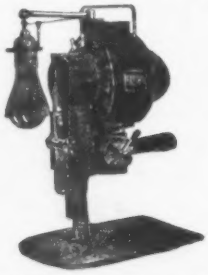

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